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Painting—From the Artist's Point of View.

NOTHING strikes one more in listening to passing remarks in public picture-galleries, or to current conversation in society about pictures, than the inability of average exhibition-goers to formulate any judgment of pictures on principle, to realise what makes the quality of a picture good or bad, or even to perceive that there is any principle involved at all. They are persuaded that it is entirely "a matter of taste." Yet if one were to ask two or three competent painters or art-critics to go round a gallery and select, independently, what they each considered the good pictures of the collection, though their preference for one example over another might vary, their lists of the good pictures would be nearly or perhaps entirely the same. This is because they would know what should be the objects and what are the difficulties of the art of painting, and whether these objects are attained or not. The general public think nothing of such questions; they merely "like" this or "don't like" that, and in most cases their liking depends either on whether the subject of the picture interests them, or whether it appears to them to be a successful imitation of some object natural or artificial. The idea that the object of the art of painting is not imitation is bewildering to them. If not for that, what is painting for?

And the question is too large and complex, certainly, to be answered in a sentence; nor are we attempting to answer it here. It would be matter for a separate treatise. But something may be learned of the objects of painting, and of what are not its objects—of the painter's aims and methods, and of the difficulties with which he has to contend—of the true intellectual interest of the art, from Mr. Clausen's six lectures on painting, now published, with some alterations, as a book.* The lectures were originally delivered especially to the art-students of the Royal Academy; but if the general public could be induced to read them (and there is nothing in them that requires expert knowledge to follow and understand), they would be in a way to understand more about painting than they mostly understand now, to enjoy it more and to judge it with more insight. We are not sure indeed, that a book like this is not really far more valuable to the general reader than to the art-student. It cannot teach the art-student to draw or colour, which is his business; it can only suggest to him the aim and direction of his studies. But it can or should teach the general reader—the spectator at exhibitions—to think, both as to the objects of painting, and as to its relation to nature. As the author says at the close of his third Lecture:—

> "We can only see what we have learned to look for. An uneducated person will consider a face in a picture beautiful if it has bright eyes, pink cheeks, and red lips; or a landscape beautiful if it also presents him with the obvious facts. It will be enough for him; it is as much as he sees in nature. But Nature does not reveal her beauties unsought, and the study of paintings by those who are not artists is not only an education, but an added pleasure to their lives, enlarging and directing their minds, so that they learn to detect and appreciate beauties in nature to which they would otherwise have been blind."

This, it may be observed, suggests something much beyond Browning's celebrated and certainly admirable expression (in "Filippo Lippi") to the effect that we care for things for the first time, when we see them painted, which we have seen fifty times before and never noticed. The reason is a double one: first, there is the natural interest in the display of skill in drawing and colouring; secondly, the comparison of the drawing with the original (or our recollection of it) leads us to notice points in its form and structure which we had not noticed before. This is, however, merely the realism of painting; and implies that even imitation, though not the true or highest object of art, has its interest and its educational value. But Mr. Clausen's suggestion goes further than this; it implies the perception of a beauty and a sentiment in nature sought out and translated by the painter, whose work in turn may suggest to the spectator something in the scene of deeper interest than a casual inspection of its mere physical facts would reveal. Thus in

* Six Lectures on Painting, delivered to the students of the Royal Academy of Arts in London, January, 1894. By George Clausen, A.R.A., R.W.S., Professor of Painting in the Royal Academy. London: Elliot Stock. 1904.

landscape-painting the artist is the translator, not the mere imitator of nature.

For all painting, as the author says elsewhere, is a partial statement—a reading or rendering of nature, rather than an inventory. This is in his second chapter, "On Lighting and Arrangement," where the amateur may obtain many hints as to the problem of the general composition of a picture, a far more complicated and difficult one than those who view the finished result are likely to surmise; the difficulties of picture-making really lying not in the treatment of separate details, but in what Mr. Clausen calls "The control of the whole canvas"—the determining what part of a picture is to be given prominence, and how that is to be attained; and composition in line and in light and shade is well illustrated by two sketches after Velasquez and Corot. Then we have the difficulties, which are quite out of the grasp of most exhibition-goers, arising from the necessity, because pigments have no *positive* light, but only absence of dark, of arranging the values of a picture so that the sun, for instance, if introduced, shall have sufficient light effect by contrast; or that the light in the sky shall be sacrificed to the ground or the figures, or *vice versâ*, if necessary. A good example of the want of convention is mentioned in the case of Holbein's "Ambassadors," where the figures, as we have always felt, do not assert themselves sufficiently, in consequence of the realistic working up of all the accessories. Some remarks on "the disturbing influence of photography" should not be overlooked. The photograph sees what the human eye cannot; it therefore cannot present nature as seen by the eye. Photography can be suggestive (or, we may perhaps add, useful as a memorandum), but "you cannot make that yours which the camera chooses to give you. You must make your own selection from nature." And he remarks, as we have often done, that photographers are now seeking to use, though clumsily, the conventions of the painter, by arranging the tones and concentrating the lights of their pictures; which in fact is only doing badly what a painter can do much better.

The lecture on "Colour" is full of suggestions which will be new, or at least unthought of usually, to many who examine pictures. What a field for observation is suggested by the mere remark that "nothing in nature is actually the colour that we see it. It only appears to us at a given moment as a particular colour, in relation to the other colours that surround it"; and some facts illustrative of this are mentioned. The tendency to paint out of doors in too cold a key is given as the reason why we often see "pictures of sunlight which give no impression whatever of warmth," changing their key when brought into indoor light. This may be the reason for those pictures of the modern Dutch and modern French school which we sometimes see, with the title "Summer," or "Sunny day," and which are absolutely chill in their effect. The question of "quality" in colour is another curious problem. Two men will paint a sky with the same pigment; one will give an impression of sky, the other only of blue paint. In what does the difference lie? It is impossible to define; it is a kind of intuition on the part of the painter. The painter in water-colour, however, has his quality to some extent made for him by the conditions of the transparent material. The author speaks finely of "the emotional power of colour—*i.e.*, the power which colours in themselves have in inducing a mood—as an important element in painting."

> "The sad, golden tone of Rembrandt seems to strike the keynote of his sentiment, and to bring us into his frame of mind before we realise his subject. In the same way, the rich reds and warm colours of Titian, Rubens, and Reynolds produce in our minds the sense of activity, richness, and splendour, quite irrespective of the drawing or modelling of their figures, or of the meaning."

Nothing could be more true, yet it is surely pushing the thing too far to say that truth or beauty of colour is "the only thing that gives a picture a high place among the masterpieces." How does that square with the author's great admiration for Michaelangelo, as standing apart from all other painters, and who was certainly not a great colourist? The inspiration of a picture certainly appears more in colour than in any other quality; but it may have a high intellectual power independent of colour.

Our space is limited, or we would gladly have followed Mr. Clausen more in detail through his lecture on the fascinating subject of "Landscape and Open-air Painting," in which however we cannot but draw attention to an admirable remark as to the essential element in landscape art. A landscape must be a record of a scene, and true to the appearance; but there must be something more. And what is that "something more"? "The interest for us lies in seeing or recognising the great elemental forces of nature, living and acting through the little things upon the earth. A landscape should not be so much an inventory as a transcript or translation of a mood of nature." If people could only be got to understand this, there would be a very different popular appreciation of landscape painting and landscape-painters from what at present obtains in this country. Not but that "transcripting" may be carried too far; we are perhaps tempted to think that Mr. Clausen himself carries it too far occasionally. But in any case it is more intellectually interesting than realism.

We may conclude with a reference to a point touched upon in the Introductory chapter, on which we cannot quite agree with the author. He says that the distinction made in the present day between painting which is decorative and painting which is pictorial is unfortunate, and ought not to exist, as "all pictures should decorate the walls or places on which they are placed." It is of course true that all pictures should in one sense be decorative in line and composition; that is the artistic element in the design of a picture; but this need not be confounded with the use of the word "decorative" to imply a certain conventional and architectural character of design, which is not, and is not intended to be, realistic. We are, in fact, using the same word in two distinct meanings. A "decorative picture," in the latter meaning, is one which is kept on a front plane, and designed with a certain severity of line; it is the style, in fact, suitable to fresco painting on a mural surface, as against that suitable to oil-painting on a framed canvas. The latter, no doubt, may and should be decorative, but in a different sense. We want another word in our artistic vocabulary.

There are few points indeed, however, which we should question or take exception to in this admirable book, which we hope will be widely read: it cannot be intelligently studied without profit to the reader.

SOME BRETON CHAPELS.

By F. C. EDEN.

ABOUT ten miles north of Quimperlé, on the departmental road running between that town and Carhaix, there is a spot where the traveller who keeps a sharp look out towards the east may be able to detect a group of three slender spirelets just showing their points above the trees. A gate in the hedge opens into some squalid farm premises, across which a dirty track, almost impassable in wet weather, must be followed, till it loses itself in a green field, where there rises out of the grass just opposite the charming Gothic front of S. Fiacre's Chapel. Here we have a typical building of its class, and a veritable treasure-house for painter, architect, or ecclesiologist. Typical in many respects, for to the fact of its being not a parish church, but a simple chapel, where the only services held during the year are at the annual "Pardon," or dedication feast, it owes an entire immunity from restoration.*

Even in remotest Brittany it is hard to find an unrestored church, so that it is to the chapels that the true lover of "old, unhappy, far-off things"—of things Gothic, in fact, must needs turn. Typical, too, is S. Fiacre in the way it eludes discovery—even when you know the whereabouts of one of these buildings it is often extraordinarily hard to come upon, and usually impossible of access except on foot—and so, also, in its evidences of former prosperity, and of having been designed in a fine enthusiasm, and with far greater originality and skill than the average parish church of the district, where too often dulness reigns. There is one almost invariable accompaniment of a chapel which, however, S. Fiacre lacks, and that is the grove of closely-planted beech or chestnut trees which make thin shadows about the Calvary, and on the mossy turf, and seem to suggest, as things in Brittany so often do, some Druidic prototype.

To return to the façade. The *clocher* is a remarkably good example of a fairly common type (*cf.* Penmarch and Tronoan, where it stands over the chancel arch, and the ruined church at Kérity). The west wall is of enormous thickness, and carries three spire-crowned turrets. The central spire is crocketted, and springs between traceried gablets from the square open stage in which the bells are hung. At the foot of this stage

* An immunity it is not likely to enjoy much longer, for the building has been made a *monument historique*; so that if anyone would see it before it is re-roofed, re-floored, re-plastered, re-ceiled, and re-glazed, let him set about doing so without delay.

(which is sturdier than usual) is an overhanging gallery, prettily corbelled forwards, and bridged across right and left to lesser flanking turrets, one of which encloses a newel stair, and the other a little octagonal room with square-headed windows. The side spires are of unequal height, and the southern, or stair turret, is set somewhat behind the plane of the other two—a delicate subtlety of design, in no way dictated by structural necessity, but completely justified by results, in that the three spires, as seen from different points of view, group in curiously puzzling and picturesque perspective. The material is a close-grained variety of granite, capable of receiving exceptional delicacy of treatment, and the detail is all of the most refined character.

The south porch is of the "Apostle" type, so common throughout Brittany, with double entrance doors, and a canopied stoup corbelled out from the *trumeau*. The interior exhibits many characteristic features. Here you may expect to find a floor, partly of heavy granite slabs, and partly of earth; a painted rood screen, with its loft and figures; mouldy altars defaced and disused; tattered shreds of rich glazing festooned across traceries of extreme elegance; a large east window, with a central mullion in a square, English-looking *chevet*; whitewashed walls sensibly striped along the base with black; many homely images on brackets about the altars, those of Our Lady and the patron on the east wall enshrined in rich shuttered tabernacles of timber; a boarded barrel ceiling, distempered blue, but with its wall-plates and dragon-headed beams uncoloured; and perhaps a wheel of bells or a decayed altar canopy lying somewhere in a corner.

Such, surely, must have been the appearance of many of our own village churches in Elizabeth's reign. Here we have the very items of the XVIth century inventories, with that old-world savour clinging about them yet, which the quaint directness and antique spelling of the inventories themselves seem so curiously to reflect. How better could one describe the rood screen at S. Fiacre, for instance, than as "a parclose of old paynted tymber devyding the quyer and the body of the church, whereon stondyth a roode with dyvers olde ymages of tymber"?*

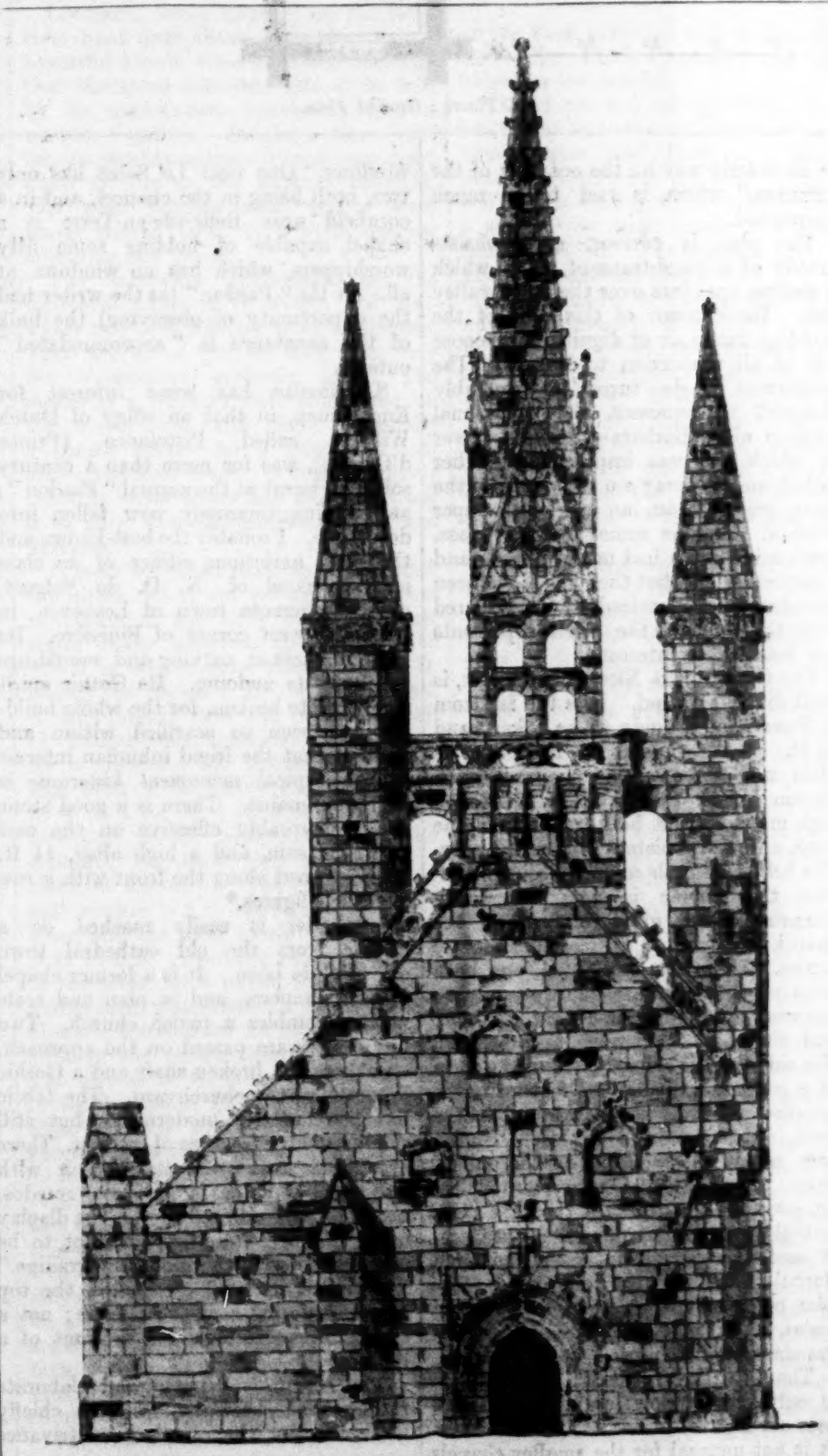
The altar in the middle of the aisle, now covered with broken imagery, shows signs of having been "inclosyd with oke." What the early ecclesiologists called a "bench-table" runs along the north wall and round the transepts, and is the only "sitting accommodation" in the chapel. There are many fragments of glass. The most complete window is that over the altar in the south transept. The centre light displays a jesse-tree on a blue ground, and the sidelights the twelve apostles in couples under canopies. In the quire there is "j lytell galery of tymber" capable of holding about three persons, and approached by a stone turret stair. Whether it was a pulpit or a singer's gallery could not be determined. It is now ricketty and unsafe.

The screen was badly tinkered some time in the sixties, when its stair was probably made away with. There is no evidence to show whether it was straight as at S. Nicolas, or spiral, as at Lambader; and now there is no means of access to the loft.

The little market town of Le Faouët, situated on a hill about two miles to the north, will be found an agreeable stopping-place—at least it used to be so before it was "discovered" by artists. From here may be visited two other chapels of great interest—viz., S. Barbe and S. Nicolas.

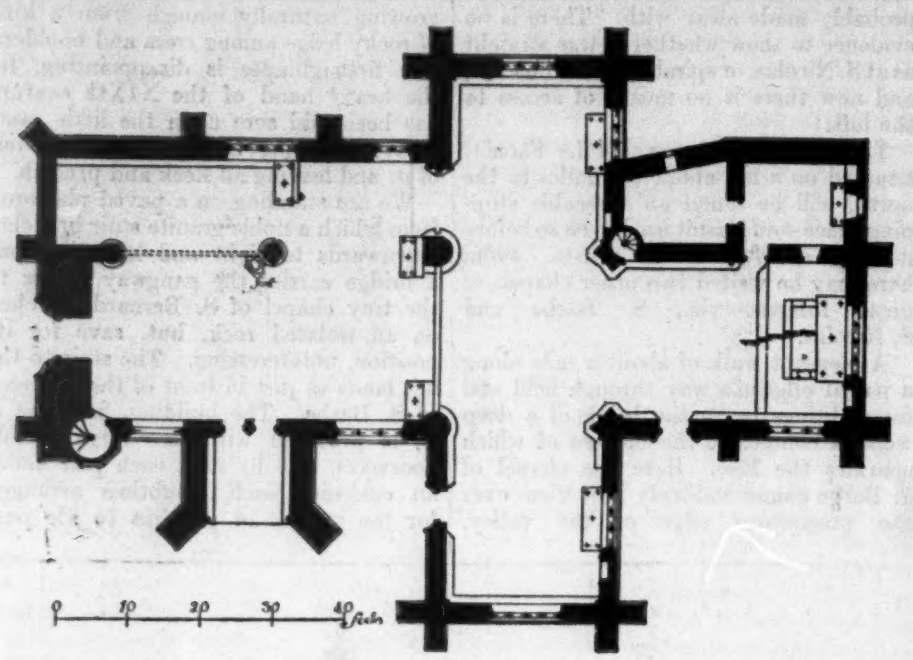
A pleasant walk of about a mile along a paved pilgrim's way through field and forest brings us to the brink of a deep wooded combe, at the bottom of which sparkles the Ellé. Here the chapel of S. Barbe comes suddenly into view over the precipitous edge of the valley, growing naturally enough from a kind of rocky ledge among trees and boulders. The first glimpse is disappointing, for the heavy hand of the XIXth century has been laid sore upon the little sanctuary, knocking the mediæval fun out of it, and leaving all sleek and prudish.

We are standing on a paved platform, from which a noble granite stair branches downwards to right and left; in front a bridge carries the gangway across to the tiny chapel of S. Bernard, perched on an isolated rock, but, save for its position, uninteresting. The stair to the left lands us just in front of the entrance to S. Barbe. The building, small as it is, is provided with two large double doorways, side by side, each pair under an enclosing arch, doubtless arranged for the stream of pilgrims to file past



S. Fiacre: West Front.

* From the Inventory of Temple Balsall.



S. Fiacre: Ground Plan.

in an orderly way on the occasion of the "Pardon," which is said to be much frequented.

The plan is curious, and consists merely of a quasi-transept, from which a shallow apse juts over the steep valley side. The exterior of this part of the building has an air of dignity and repose out of all proportion to its size. The north-west angle turret is probably designed to represent the traditional emblem of S. Barbara—viz., the tower in which she was imprisoned by her father, and one may see the image of the saint peering from an unglazed upper window. Here is some fair late glass, much mixed with bad modern stuff, and a carved gallery, but the chapel has been considerably modernized, and, compared with the outside, the interior presents few features of interest.

The Chapel of S. Nicolas, in Prisiac, is most difficult to find. It is too far from le Faouët for a guide to be taken, and as the peasants speak no French, it is little use for one unacquainted with Breton to ask the way. It stands on high ground, about half a mile from the road, and is completely hidden by trees. The belfry is simple and good, but otherwise the outside is not particularly attractive. The great feature of the chapel, however, is its magnificent late screen. The whole is painted, and both sides of the loft bear figure sculpture; the west, scenes from the life of the patron, and the east, the twelve apostles; on this side there is a fixed desk in the form of a pelican. An unusual feature is the panelled and canopied backboard to the road, which stands in the usual Breton way, not in the loft, but on the gallery front. The screen was repainted, as an inscription testifies, in the year 1768, but all the same the colouring is excellent, if somewhat rough in execution, and doubtless follows the old lines. The plan of the chapel is cruciform, without aisles, and, as at S. Fiacre, the screen stands west of the crossing.

The nave is very dark; in fact there is only one window, and that a small rose set high up in one of the side walls. It is not unusual for the smaller chapels to be thus scantily provided with windows. One near Le Saint has only two, both being in the chancel, and in a cornfield near Belle-isle-en-Terre is a chapel, capable of holding some fifty worshippers, which has no windows at all. At the "Pardon" (as the writer had the opportunity of observing) the bulk of the assistance is "accommodated" outside.

S. Nicolas has some interest for Englishmen, in that an effigy of Dutch William, called Pistolance (Prince d'Orange), was for more than a century solemnly burnt at the annual "Pardon"; an edifying ceremony now fallen into desuetude. Probably the best-known and the most ambitious edifice of its class is the chapel of N. D. de Folgoët, near the remote town of Lesneven, in the north-west corner of Finistère. Its very richness in carving and mouldings has been its undoing. Its Gothic spirit is now quite broken, for the whole building has been so scarified within and without that the frigid inhuman interest of the typical *monument historique* is all that remains. There is a good stone *jubé*, remarkably effective on the east or wrong side, and a high altar, 14 ft. long, adorned along the front with a row of niched figures.*

Lambader is easily reached on a bicycle from the old cathedral town of S. Pol de Léon. It is a former chapel of the Templars, and in plan and scale much resembles a parish church. Two fine crosses are passed on the approach, and there is a broken shaft and a Gothic fountain in the churchyard. The fabric has been utterly modernized, but still retains sundry features of interest. There are three mediæval altars, each with its stone "halpas," or low reredos, provided with a broad top for the display of images or reliquaries, and not to be confounded with the modern "gradine." The halpas is itself a reredos, the top of which forms a shelf or ledge; not a shelf for candlesticks set in front of a reredos.

The screen is delicate and elaborate rather than beautiful, and is chiefly noticeable for the excellent contrivance of its spiral stair. So cunningly is this managed that, though standing between screen and altar, it interferes in no way with the view of the latter as seen between the muntins. Nor is it a flimsy affair by any means. The steps, eighteen in number, are solid, of about 6½ in. rise, and tenoned into a 4½-in. newel post. Each is pinned to the step above it, and, though no support is given by the outer string, which is purely decorative, the stair is as firm and noiseless as when first put together.

The chapel known as the Creisker, at S. Pol, has likewise been made a national monument, and with the usual result. It is of the general form and scale of a parish church, and has an ugly steeple, which is much admired.

Belle-isle-en-terre, a small town on the main road, between Morlaix and Guingamp, though, like le Faouët, it possesses no buildings of any interest, is a convenient stopping-place, and has a comfortable inn. About seven miles to the west, in the direction of Morlaix, and right upon the high road, lies the chapel of Keramanach ("house of the monks"). This little edifice exemplifies what has been said of the extreme care which was often bestowed upon the design of these buildings. The simple belfry is entirely satisfactory in proportion and detail, while the windows show what time and skill can do with such a stubborn material as granite. The tracery is both strong and refined; that of the great east window comprises over ninety openings, and, unlike so much flamboyant work, is divided into orders duly subordinated; indeed, considering the nature of the material, the grace and freedom of its lines are quite wonderful.

The plan is a simple parallelogram, with a porch and north aisle, the latter apparently added as an afterthought. Behind the altar is a low wall inclosing a small sacristy, which is entered by a minute door on the gospel side. The middle part of the wall is stepped up to make space for a reredos composed of alabaster reliefs set in a black wooden frame. The only remains of the screen are two moulded uprights, and a short piece of cross-beam set gallows-wise against the south wall as a support for the rood. A canopy, or tester, which was formerly suspended by a chain over the high altar, of Gothic form but debased detail, now lies neglected by the west door. The tracery of the east window is full of delicate XVth-century glass, consisting mostly of heraldic devices and angels in white and stain.

In a valley that intersects the curious boulder-strewn country about Huelgoat lies the beautiful chapel of S. Herbot. Seen from far is the great square tower, which gives such nobility to the little sanctuary as the smaller Breton churches can seldom boast. In the churchyard is a Calvary group poised on a tall shaft. It is a good specimen of its kind, and more satisfactory than the wild processions of crude imagery which attract so many tourists to the ambitious structures at Guimiliau and Plougastel. The screen is fully developed Renaissance, and has no loft. On either side of the rood, in painful contortions, are the gibetted figures of the two thieves. Several old painted saints stare out of tabernacles

* Nodier gives a fine measured drawing of this altar.

beside the altars, or stand on iron brackets against the columns. The building is in good repair, and looks as if it were used for parochial purposes, but, happily, it has not yet been "brought up to date."

Kerfons Chapel is in a very remote situation, far from the high road, and, perhaps, for this reason, retains more of its ancient fittings than any chapel which the writer has visited. It has, however, suffered terribly from neglect and ill-usage. Part of the nave has evidently been open to the weather for some considerable time—it is now rudely ceiled with deal boards, and the condition of much of the woodwork is sufficiently deplorable to be made the excuse for a good deal of doubtless drastic renovation whenever it is taken in hand.

The screen, with its loft and spiral wooden stair, is of exceeding richness. The painting lacks the delicacy and precision of English work, but is soft and pleasant in tone. Images of SS. Mary and John, much weathered and withered, still adorn the gallery front, but the rood itself lies in pieces in the loft. It is a simple cross *ragulé*, but when reconstructed was found to be of such admirable proportions, and to compare so well with the side figures, that the dimensions are worth noting. They are as follows:—

Height of cross, 7 ft. 8 in. (The top has been fitted to a socket, possibly for the pelican in her piety.) To underside of arms, 5 ft. 10 in. Width across arms, 5 ft. 7 in. Diameter of section, which is roughly circular, 3½ to 4 in. Height of the Christ, 4 ft. 11 in.; of side figures, 3 ft. 4 in. Distance apart of same, centre to centre, 5 ft. 6 in. Height of loft front on which all stand, 3 ft. 9 in.

Beside the broken rood there was a "stondyng letterne of tre in the rode lofte," a triangular pedestal covered

Keramanach: West Front.

with flamboyant carving and supporting a double turning desk, the feet in the shape of clenched hands. There is some good panelling in the transept with a fixed bench against it; several linen panelled doors with braced stiles; quite a "populus statuorum," forlorn things on brackets; an interesting and peculiar Renaissance ceiling in the south transept, and some good furniture in the sacristy falling to decay.

Of the other chapels visited by the writer, Kernascléden, a rich, vaulted building, is a *monument historique*, and has been vulgarised *à la mode*. It is now parochial. There are some paintings of angels in fine floating draperies on the north transept vault, and an elaborate porch. N. D. des Cieux, near Huelgoat, has a picturesque belfry, but the inside is spoilt.

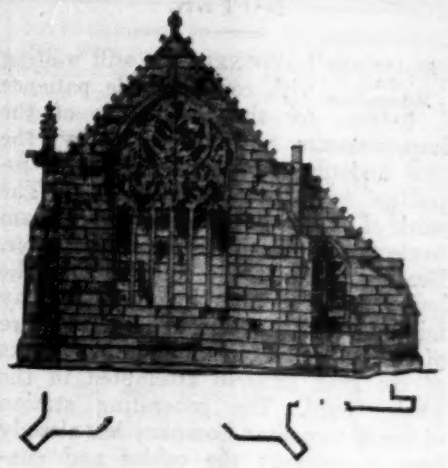
Locmaria, finely situated on the lofty river bank just above Belle-isle, has a beautiful screen, which has lost one, and that the more elaborate side of its loft, by its unfortunate conversion into a western gallery. Judging from the beauty of what remains it must have been quite as fine as the Kerfons example. The good painted rood figures were found stowed away in a little ossuary adjoining the porch.

The following particulars of the mediæval altars in S. Fiacre and elsewhere will be of interest to ecclesiologists. They are all of granite, and, with very few exceptions, perfectly plain. The *mensa* is a thickish slab, chamfered on the under side, and there is usually a simple hollow for a base-mold just above the floor level. It seems unlikely that the lesser altars had foot-paces, but if so they were doubtless of wood, and movable.

It may be noted that, as in England, the altars, when not set against screens or pillars in the body of the church, stand under windows, the glass-line of which is seldom more than 2 ft. or 3 ft. above the *mensa*; the window itself, in conjunction with the inevitable pair of images on brackets, doing duty for a reredos. The dimensions of the high altar at S. Fiacre are 11 ft. 7 in. by 4 ft. 1 in. by 3 ft. 3 in. high. The fore part of the *mensa* is carried on columns, the back part resting on a block of masonry. The sill-line of the east window is 2 ft. above the top of the altar, and the total width of the chancel is 21 ft. 8 in.; less than twice the length of the altar, be it noted, in view of the undignified stumpiness of most modern altars. I measured an unusually large altar in the parish church of Plouaret. The slab is 18 ft. long, by 3 ft. 10 in. in width, and is 10 in. thick; here the altar is even larger in proportion to the width of the chancel, which is only 26 ft. 6 in. between walls.

S. Sebastian's altar stands outside the screen, against the eastern pier of the nave arcade, and has a stone reredos 4 ft. 8 in. high, resting on the altar itself, not, as is the usual modern arrangement, on a separate erection. The dimensions are 5 ft. 7 in. by 3 ft. 3 in. by 3 ft. 7½ in. high. Altars in the body of the church against columns and so forth, are of course relatively short.

The screen altar is 5 ft. 2 in. by 3 ft. 9 in. by 3 ft. 6 in. high; and has a rough ledge



Keramanach: East End.

at the back raised an inch or two above the slab, which probably carried a halpas or low reredos.

The north end of the aisle altar is built right up to the wall, interrupting the bench table, and there is a bracket piscina projecting at the back. The slab is 6 ft. 4 in. by 2 ft. 6½ in. wide, including a space 7 in. wide on which a reredos formerly stood. The height is 3 ft. 1¾ in. above the present floor level.

At Lambader a Gothic altar in the nave measures 5 ft. 10 in. by 3 ft. 10½ in. by 3 ft. 4½ in. high, and carries a halpas about 2 ft. in height. The altar in the north chapel is 5 ft. 3½ in. by 3 ft. ¼ in. by 3 ft. 4 in. high. Its halpas is 2 ft. 2½ in. high, and 10¾ in. broad, and carries two plain shields in front, and a moulded cornice. From the top of the halpas it is 1 ft. 8 in. to the glass line of the window.

The north transept altar in S. Nicolas measures 6 ft. 2 in. by 2 ft. 6 in. by 2 ft. 11 in. high, and is 1 ft. 5 in. below the splay of the window-sill. The high altar at Keramanach is 11 ft. 1 in. by 2 ft. 10½ in. by 3 ft. 8 in. high, in a sanctuary 21 ft. wide, so that the proportion is about the same as at S. Fiacre. One point to be noted in connexion with old altars is their ample width from front to back; a dimension almost as essential to dignity as length, but the importance of which is rather apt to be overlooked nowadays.

The few chapels described above are those alone which the writer has had the opportunity of studying; but when it is stated that in the department of Morbihan there are no less than 118 (omitting those which are in ruins or quite modern), in the Côtes du Nord 98; and in Finistère 45, whose dates range from the XIIth to the XVIIIth centuries; and that some of them, as Rosgrand, S. Avoye, Bréhan, N. D. de la Clarté at Baud, S. Nicolas at Plédran have rood screens, or considerable remains of such; that several still preserve mural or roof paintings; that still more retain reredoses, imagery in wood and stone, and considerable quantities of stained glass, and that there are more or less interesting crosses, calvaries or fountains in the vicinity of the majority, it will be seen what a field for discovery is open to anyone who should be led to make a special study of these unique buildings.

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NOTES.

Electrification of the Metropolitan Railway.

LONDONERS are still waiting with commendable patience for the completion of the improvements now in hand by the two underground railways—the Metropolitan and District Companies. The work of changing these lines from steam to electric traction is of onerous character. Bearing in mind the mileage and the heavy train services involved, it may fairly be said that the undertakings are of far greater magnitude than any works of the kind hitherto attempted in the whole world. The generating station of the Metropolitan Company has already been completed; the cables and conductor rails are laid, and the general equipment of the permanent way is complete from Baker Street to Uxbridge. Similar work is now in progress night after night on the Inner Circle section of the line, and we believe will shortly be completed. The new rolling stock is partly delivered and the remainder is in course of construction in Birmingham and Manchester. Considering the difficulties and delays that always arise in connexion with important engineering works, it is evident that satisfactory progress has been made by the company, and that at no distant date one of the most beneficial works of modern times will be consummated. We are glad to learn that some of the principal officials of the company are about to visit the United States to inquire carefully into the methods of working electric railways in that country, with the object of obtaining some hints that may be of service when electricity furnishes power for traction on the Metropolitan Railway system.

The Hotel Astor, New York.

PROBABLY the Hotel Astor, which will shortly be opened in New York, is the finest building of its kind ever erected. Every possible detail has been included, whether for securing economy of management or the convenience of residents. One of the most interesting features is the mechanical plant, which is fully described in a recent number of the *Engineering Record*. This installation will be open to the inspection of visitors, in accordance with the custom usually followed in numerous modern American hotels. The plant includes watertube boilers with an aggregate capacity of 2,400 horse-power, a refuse destructor with a 50 horse-power boiler for the utilisation of waste heat from the furnace, electricity generating sets of 1,600 horse-power, from which current will be supplied for lighting, for lifts, as well as for pump and other motors. The lighting system includes 13,000 lamps of 16 candle-power; the lift equipment seven passenger and two luggage lifts, besides conveyors and hoists, and represents 336 horse-power in motors. The heating and ventilating plant comprises over 43,000 square feet of radiating surface, and sixteen fans, capable of circulating 240,000 cubic feet of air per minute. Hot and cold water supplies, pneumatic delivery tubing, compressed air and refrigerating plant are also important features of the equipment. We must refer our readers to the detailed description for full particulars of this remarkable installation, which, in addition to its utilitarian purpose, is of distinct educational value.

Extraordinary Traffic on Highways.

THE recent case of the Kent County Council *v.* The Corporation of Folkestone, in which Mr. Justice Darling found as a fact that there had been an extraordinary use of a highway by the Corporation of Folkestone so that they were liable to the cost of repair of the part so used, exemplifies a growing legal tendency of great importance to contractors and builders. This tendency is the increasing activity of highway authorities to take proceedings in respect of extraordinary traffic. It is natural that they should do so, being stronger and more business-like bodies than the old parish surveyors and highway boards. The principle of making those who use the roads to an extraordinary degree pay for their special use has a good deal to be said for it, but if carefully analysed it would probably be seen not to be so sound as at first sight it appears. True, at present it is the law, and a law which is likely every year to become more burdensome to those who have to use portions of highways to an unusual degree for a special purpose.

Pneumatic Despatch.

ALTHOUGH the pneumatic despatch system has been used in London for nearly half a century, its application has been confined chiefly to the post-office service, and the tubes employed are rarely more than 2¼-in. diameter. The same system is applied in connexion with provincial post-offices for the conveyance of telegrams. In the United States the tubes are of far greater size, those installed between the New York post-office and the central station being of 8-in. diameter, while tubes of the same, and even of larger diameter, are employed in several American cities for the despatch of parcels as well as of letters. A proposal is now on foot to promote a Bill in Parliament to authorise the establishment of a pneumatic parcels service in London. Such a scheme, to be effective, would involve a very heavy capital expenditure, probably running into millions, but if sanction can be obtained and the money raised, the project would be of immense convenience, and should also have the effect of reducing vehicular traffic to a marked extent.

Manchester Ship Canal.

FROM the half-yearly report of the company, it is satisfactory to learn that, in spite of unfavourable trade conditions, the seaborne and barge traffic on the canal amounted to 1,903,833 tons in the first half of this year, as compared with 1,835,805 tons in the corresponding period of 1903. We referred in a previous "Note" to the Bill relative to the deepening of the canal, and are glad to find this measure will be passed before the close of the present Session. Another Act, which has already been passed, is of much importance, and confirms an arrangement between the Corporation of Manchester and the company, which will greatly facilitate the construction of wharves and dock accommodation at the Manchester end of the canal. The liberal support of the Corporation has been of inestimable value in the past, and the new Act will still further benefit the company, shipowners, and traders alike. At the present time additional jetties are being built at various places along the waterway, spare upper gates are being provided for the 40 ft. wide locks, and additional plant is in hand for the No. 9 dock and the transit shed. These works will probably be completed in June, 1905. It will be seen that due attention is being paid to the requirements of traffic in every possible direction, and one most satisfactory circumstance is that the expenditure of capital in this manner has always led to increase of net revenue, which, for the past six months, amounted to more than 92,000*l*.

A Small Museum at Famagusta.

AN interesting small museum has recently been created out of an old church in Famagusta, Cyprus, by the successful efforts of the new Curator of Ancient Monuments. It contains about 100 examples of the most interesting stone carvings of the XIIIth and XIVth centuries, some of which have been illustrated by M. Enlart in *L'Art Gothique en Chypre*, besides a quantity of old arms and armour found in the city at different times since the British occupation. There are also some curious relics of stained glass singularly preserved, in spite of the ruin of all the old churches at the time of the Turkish bombardment. This new institution will form an additional attraction for visitors to this most famous old city.

Vestiges of the Fleet River.

IN excavating the site for a block of new buildings at the corner of Farringdon-street and Seacoal-lane have been found some relics of a time when the Fleet was navigable for small craft. At a depth of some 20 ft. were discovered a row of blackened oak piles, with camp-shedding, which had been constructed to hold up the bank and to serve as a retaining wall for a wharf or quay formed of bricks and stones bonded with lime. The curve of the wharf up Seacoal-lane indicates that there was a creek or dock for the loading and unloading of barges and lighters that were plied on the Fleet near its junction with the Thames.

The Architectural Association Excursion.

PARTICULARS of the thirty-fifth annual excursion of the Architectural Association, which is to be held in Sherborne and neighbourhood from August 15 to August 20, have now been issued. On Monday, the 15th, the party are to visit Trent Church, chantry and house; Sandford Orcas house; and North Cadbury Court and church. On Tuesday they will journey to Crewkerne, Beaminster, Melplash, and Parnham, and on Wednesday the house at Clifton Maybank and the house and church at Brympton are to be seen and Newton Surmaville visited. Thursday will be devoted to the following visits: Templecombe, Blandford, Milton Abbey, Piddletown, Waterson, Dorchester, and Yeovil. The party will again visit Yeovil on the following day, when the village and church of Tintinhull, Montacute House, and Preston Grange will be seen. On Saturday the excursionists will remain in Sherborne. The

Hon. Secretaries of the excursion are Messrs. W. Talbot Brown and A. W. Hennings. Second-class reserved compartments on the 2.55 train from Waterloo will be arranged for on Saturday, the 13th, and the headquarters of the excursion will be at the "Digby Hotel," Sherborne. Favoured by good weather the excursion should be a very successful one.

MAGAZINES AND REVIEWS.

To THE *Art Journal* Mr. C. F. Bell contributes an article on a curious and interesting subject, that of the series of artistically-embellished "Oxford Almanacks," issued by the University annually since 1674, and of which we gather that complete examples still exist with the exception of that of 1675, the second of the series, of which no copy is extant. These almanacks consisted each of a large sheet containing a time-table of University events for the year, which time-table, however, is quite subordinate, especially in the earlier examples, to the decorative treatment of the sheet. Reproductions on a small scale are given of a good many of the sheets, and very interesting they are, especially the older ones. The latter, according to the fashion of the XVIIth century, are almost entirely allegorical and symbolic; the XVIIIth century examples that are given show rather mechanical and perspective views of this or that college, accompanied by imaginary or allegorical figures in the foreground; while, when we get to the XIXth century, allegorical and decorative character have been alike dropped, and we find views of Oxford in landscape style, to some of which the great names of Turner and de Wint are appended. Turner drew the Almanack annually for some years, having been first appointed as artist at the age of twenty-five, before he was famous. Before he abandoned the post he had become a man of renown, but was not the less taken to task by the Dons for inaccuracy in his representation of some of the buildings which he took as the subjects for his illustrations—probably with reason, if accuracy was an object with them. In his younger days Turner was one of the most masterly and painstaking of architectural draughtsmen, but later the spirit of the landscape-painter, in search of broad effects, relegated architectural accuracy to a secondary place. In spite of the high artistic quality of the later landscape-painters' illustrations, and of the old-fashioned and (to us) eccentric character of some of the earlier symbolic designs, one cannot but feel that the latter were really much more the right kind of thing for the situation, being decorative in intent and effect, and showing a good deal of fancy and invention. The earliest one (1674) is very curious; the main feature is a circular building (in bad perspective), with a large arched opening in front and rear, with water all round it, and numbers of small allegorical figures swimming in the water, perched on brackets on the walls, or flying in the sky; the calendar is engraved on panels on the upper part of this building, and where the last one on each side would have become illegible from foreshortening, small flying genii have obligingly taken it out of its place on the wall and hold it up to face the spectator. Those for 1677 and 1680, both by Michael Burghers, are in a less naive style; a portion of the sheet is occupied by the almanack, on a square symmetrical space, the remainder being occupied by symbolical figures and landscape, of some power of design. The point of the whole matter, and the reason we have commented on it at some length, is that the older artists of the Oxford Almanacks had a much better idea of the decorative treatment of an almanack than those of the early XIXth century, and that, compared with the invention of decorative symbolical figures and compositions, the mere insertion of a view of a college or a street in Oxford is a prosaic and unintellectual proceeding. What is the class of work in favour at the present moment does not appear, as 1866 is the latest example given.

The frontispiece to this number of the *Art Journal* is an admirable etching of "Hindhead," by Mr. Percy Robertson.

An article by Mr. Sturge Moore, in the *Burlington Magazine*, on "A Canon of Proportion for the Human Figure," is not rightly described in the title, since it only deals in a general way with the question whether such a canon is possible or necessary, and with suggestions as to the real meaning of Abrecht Dürer's theory of proportion; viz.: that it was only a central or normal standard by which to measure differences or deviations from it, as required for artistic expression. But surely this is only the mere common sense of the matter; no one supposes that an ideally perfect or standard form is to be applied mechanically, as it were, to control all a painter's figures. To arrive, however, at a normal standard of physical proportion in the human figure is a matter of very great interest, and the article does not assist us to it, as the title seemed to promise. The article on "Old Moustiers Ware," translated from the original of M. Henri Frantz, is of real interest as making us acquainted with a once famous pottery ware in France of which the examples are scattered and difficult to come at; and the beautifully executed illustrations add to its value. A short article by the Editor on "Art as a National Asset" should be attended to. It seems a low view to take of art, to regard it as a power commercially valuable to the nation which possesses it; but it is nevertheless one form of the national value of art, as strikingly shown in the case of Italy and France. It is their art which brings to those countries multitudes of visitors who would otherwise not trouble about it; and this is a point which might appeal, perhaps, to that rigid sense of economy which characterises British legislators, who always look on public money spent on art as a form of extravagance. If one could get it into their heads that money spent in improving English art is likely in the long run to benefit the financial position of the country, perhaps even the House of Commons might take a different view of the matter. As the Editor says, one could not make the British nation artistic by an Act of Parliament; "nevertheless, a sound and systematic programme for putting good and bad art before the public with the prominence they respectively merit might effect a considerable improvement in their powers of discrimination." It is suggested that any attempt to help art and artists must include helping the public also, more especially by re-organising our galleries and museums so as to emphasise the distinction between good and inferior art. And in connection with such an effort comes in also the great importance of sound choice and judgment in such a matter as the purchases with the Chantrey Fund.

In *Public Works* will be found some description of municipal work at Rouen and at Nice, and an article on "The Bridges of Berlin." This latter is of interest as a historical sketch of the development of bridge-building in Berlin, but the more recent and pretentious of the bridges are in the worst and most tawdry taste, both in their masonry and in their decorative iron-work. Some of the sculptural decorations are better—the bears on the pedestals of the Moabit bridge, for instance; but in general design the oldest bridge illustrated, the Kurfürsten bridge, is by far the best in point of good taste and propriety of architectural treatment. In fact, the progress of city bridge-building seems to have been much the same in Berlin as in London; the older bridges simple and monumental, the later ones pretentious and covered with florid and coarse ornament.

In *The World's Work* is an illustrated description of Dr. Barton's air-ship, which has for a long time been in process of construction at the Alexandra Palace, and which was to make its first trip during the present month. It is a very complicated construction; we hope it may be successful in carrying the problem one step further, and without fatal accidents; but one cannot avoid the impression that before any real success is arrived at in aërial navigation (and we believe success is probable in the long run) a great deal of simplification of the machine will have to be achieved. Each experiment, however, may be useful in showing how simplification can be arrived at.

The *Architectural Record* (New York) contains another instalment of Professor Goodyear's studies to prove that all the lapses from vertical line and rectangular setting out in mediæval churches were made designedly by the builders, and are what he calls "refinements" of architectural design. He seems to have got to the climax in the case of St. Quentin, where the crossing piers have all taken a bend outwards half-way up their length. That the position was regarded as dangerous is shown by the tie-rods, which Professor Goodyear evidently recognises as an awkward fact for his thesis, but he dismisses them with the assumption that they were put in recently. If he had found evidence that they were ancient it would have made short work with his theory, and he has apparently not tried to get any evidence. He wants to know how piers could go 2 ft. out of the perpendicular without the vault falling in. Did he examine the condition of the vault? At Peterborough, as we all know, the piers have moved more than 2 ft. out of the perpendicular, but the vault did not actually fall in, though it was in a very precarious state before the recent restoration. We have no doubt, by the way, that if ever Professor Goodyear condescends to take English Gothic into his consideration (with American writers this is always a condescension), he will discover that the west piers at Peterborough were purposely built leaning outwards, and the choir piers at Salisbury leaning away from the crossing. But is it even necessary to consider this difficulty at all? If the tie-rods are ancient, as we surmise, the story told by the building itself seems to be this—that the thrust of the crossing arches and vaulting ribs began pushing out the piers, that tie-rods were then inserted and the arches corrected (perhaps taken down and rebuilt), and the filling of the vault inserted subsequently. It is a more reasonable explanation than Professor Goodyear's, at all events; for supposing that these piers had been deliberately built broken-backed, how is this an "architectural refinement?" On the contrary, it is one of the most clumsy, useless, and stupid things that could possibly have been done. There are a few undoubted cases in which buildings have been narrowed on plan towards one end in order to produce a false effect of increased length, but the widening of the piers at the upper portion would have the effect, not of increasing but of diminishing the apparent height of the building, and this at a time when French Cathedral builders were vying with each other in the endeavour to increase height! The notion is really too preposterous to do anything but laugh at, except to lament that a clever man should have got such a bee in his bonnet. Among the other articles in the *Record* is one on the work of Messrs. Rutan and Russell, who appear to be the leading architects in Pittsburg; we cannot say that we are struck by any very remarkable quality in their buildings as here illustrated; the large Hotel Schenley is a simple and massive treatment of a large hotel block, but it might have been made a good deal more attractive without losing simplicity. Mr. Charles de Kay's article on "The Future of Decorated Metals," which runs here into a third chapter, seems intended chiefly to introduce illustrations of American metal work; some of these are rather commonplace, and have more apparent relation with the past than the future, and the wrought-iron electrolier on page 151 is a piece of very bad naturalism; but we are grateful for the illustration of the bronze stairway in the Chicago Public Library, a good translation of a classic stone ideal into bronze form; we should have been glad to have had some details of that. The designer's name is not given.

By far the best thing illustrated in the *Berliner Architektur-Welt* is an example not of architecture but of sculpture—a funeral monument by Herr Von Dammann, consisting of a perfectly plain square stele, with an inscription cut so as to form a decorative square on the surface, and a heavily-draped female figure seated on the top of the stele, with one hand up to her chin, in an attitude of musing. There is a dignity and repose both of line and expression about this which we do not often see realised in German sculpture. Among the architectural designs illustrated the most noticeable is a lake-side restaurant, of which MM. Berndt and Lange are the architects; an erection of very fanciful character, not unsuitable for a building of the kind, and with some good application of sgraffito decoration in the interior. The number contains an essay by Dr. Hans Schmidkunz on "Kinderlust und Stadtbauschmerz," beginning with considerations on the difficulty of finding safe and adequate playing-space for children in towns, and going off (rather illogically) into a Utopian scheme for three-story streets in cities, one for heavy traffic, one for quick traffic, and one for various purposes (including apparently the children's sports). Proposals of this kind, besides being, on economic grounds, outside the region of practical politics, would result in conditions absolutely unhygienic as well as

inconsistent with anything like nobility of effect in city architecture. Proposals of the same nature have been made in England, concerning which all one can say is that their authors, to overcome a minor inconvenience of crowded traffic, would inflict on cities an expensive and permanent disfigurement and loss of air circulation.

The *Architektonische Rundschau* does not contain this month a single design worth remark except one on which we have already commented in reference to an illustration which appeared in the *Berliner Architektur-Welt*.

The *Quarterly Review* contains an article under the title "Recent Lights on Ancient Egypt," a collective review of various recent works on the subject. We do not understand why M. Choisy's "L'Art de Bâtir chez les Egyptiens" is not included among the list of books at the head of the article, although it is the subject of some two pages of special comment in the course of the review. The article is a good comprehensive summary of the present state of our knowledge of Egyptian art and history, and concludes with an expression of the opinion that, amid the great and rapidly growing bulk of material for Egyptian study, accuracy of observation and of interpretation, "which also means distinguishing clearly between fact and conjecture," should be especially aimed at. "If leading scholars would bear this in mind, their books would be either fewer or smaller, and each contribution would mark a definite and positive step in the advance of knowledge." The number also contains an article on "Giotto and Early Italian Art," ostensibly a review of the new edition of Crowe and Cavalcaselle, edited by Mr. Langton Douglas, assisted by Mr. S. A. Strong. We gather that the editor has taken a different line from the authors, who regarded Giotto as essentially Florentine and a follower of Cimabue, while Mr. Doulgas regards Giotto as essentially Roman in his artistic descent and education, and dismisses Cimabue as a myth. As we have before taken occasion to remark, this attempt by some recent art-critics to deny the influence and even the existence of Cimabue as a painter is absurd in the face of Dante's explicit reference to him as the head of painting in his day; Dante was too close to the period to have mistaken a myth for a man. The summary of Giotto's position in Italian art, at the close of the article, is eloquent and written in a true spirit of criticism.

In the *Monthly Review* Mrs. Ady writes an article on G. F. Watts which very adequately represents the feeling with which the nobility and steadfastness of Watts's life and his artistic aims must be regarded by all seriously thinking people. But as a critical review the article is pervaded by the same kind of mistake—a mistake of a noble nature, no doubt—which pervaded Watts's own view of art. Watts, in his later years at all events, made too much of the didactic element in art, to the manifest injury of the artistic element; and Mrs. Ady is so much occupied with the moral greatness of Watts's life and character (in which we are entirely in sympathy with her), that she seems rather to regard this as assuring the artistic greatness of his works. She quotes, we observe, the French critic M. de la Sizeranne, as having confessed that "the works of this English master had first made him believe in symbolic painting." Something like this may be deduced from de la Sizeranne's remarks, but those who refer to what the French critic actually said about Watts, in his book "La Peinture Anglaise," will see that this representation of his opinion is hardly accurate. We have not the book at hand at the moment for quotation; but we remember that de la Sizeranne emphasised very strongly his opinion as to the mistake of making painting into a sermon, and complained that Mr. Watts had been "le bourreau des tous nos joies" in art. The mistake of moral painting is that the moral dies, the art remains. Watts was a much nobler character than Titian, but Titian was a much greater painter.

The *Fortnightly Review* contains an article by Mr. W. B. Woodgate on the important question of the proposed Thames Barrage, with special reference to the essay by Mr. Barber in *Public Works*, which we have before commented on. Mr. Woodgate's article is a very important and thoughtful one, and should be read by those who will be officially concerned in settling the question. His opinion, which is the same as we heard long ago from one of the oldest and most experienced of river and harbour engineers, is that the stoppage of tidal action at Gravesend, which would be the result of the barrage, will only have the effect of removing the difficulty as to water to a situation lower down; in other words, that the Thames at Gravesend will then be under the same conditions (relatively) as the Thames at Teddington now is, and that we shall have less water at low tides at Gravesend, and more silting, than now exists. Considering the enormous expense of the work, and that once done it cannot be undone, the most serious consideration of the problem on all sides ought to be given to it before anything is decided on.

In *Scribner's Magazine*, under "The Field of Art," Mr. Ernest Flagg, the well-known architect, writes an article on the deficiencies of the plan of New York, with a grand scheme for a city improvement, consisting in driving a great central avenue 160 ft. wide right along the centre or back-bone of the city; a block plan of the scheme is given. Mr. Flagg makes suggestions in regard to sale or exchange of sites which he thinks would make it economically feasible; of that we cannot well judge; but that the scheme would be a grand one there is no doubt; the plan speaks for itself.

In the *Century* an article on "The Summer Splendour of the Chinese Court" is accompanied by some illustrations of the architecture in connexion with the Summer Palace (twelve miles from Pekin), which are of some interest, and include a view of a pavilion pier built in the form of a marble boat; a fancy which reminds one of the Roman treatment of the island in the Tiber.

Harper includes an article, rather historical than architectural, on Château Gaillard, with effective but rather sketchy illustrations. The number also contains a short but most important article by Sir Oliver Lodge, "Electric Theory of Matter," to which we may return.

The *Gentleman's Magazine* includes the first part of a lengthy and carefully-studied essay on the Roman remains at Fréjus, the ancient Forum Julii.

The *Antiquary* includes an article by Mr. Thomas E. Maw on "The Church Libraries of King's Lynn," a collection of books in the Stanley Public Library of that town, and which goes by the name of "The St. Margaret's Church Library." On November 4, 1631, it was ordered "that fifty pounds be bestowed by the Mayor and Burgesses towards the furnishinge with bookes of the Library in St. Margaretts church." The article describes some interesting books in the collection, with illustrations of two cuts from the Hall Book. Mr. MacMichael's essay on "London Signs and their Associations" is continued.

Knowledge contains an article by Miss Clerke on "The Inevitable Ether"—inevitable, because the mechanism of the universe appears to be inexplicable without it. Astronomers and physicists seem to be coming to a certain unity of thinking in regard to the ether, which however, so far, seems to be only a name for a condition of space which we can only appreciate by its results. Fifty years ago people talked of the "electric fluid"—an idea now only relegated to the ages of faith. Possibly fifty years hence the term "ether" may have become equally antiquated. The same number contains the first chapter of a practical essay on "The Temperature of the Air" and the means of observing and recording it, by Mr. William Marriott, and an article on "The Later History of the Horse," which we refer to because two engravings, representing the horse in Assyrian art and the horse in Greek art, have got the titles transposed, the Assyrian picture being described as Greek, and *vice versâ*; which indicates a want of "knowledge" on the part of some one.

ROMAN NOTES.

THE excavations in the Forum are still proceeding, but no discoveries of great importance are announced as having been made since the writing of my last article (*Builder*, July 23, p. 88).

On the south-west side of the Lacus Curtius, a well of the Republican period, of the oldest type, has recently been explored; it was excavated in the hard subsoil, with footholes for descent, and not lined with tufa slabs, like the wells of later date. The upper part of it was filled with lumps of tufa; at the bottom were found three skeletons of large watchdogs, together with fragments of archaic terra-cotta antefixæ. The exploration of the lower strata near the base of the equestrian statue of Domitian is not yet complete. (*Tribuna*, July 11.)

The problem of the Via Cavour has been examined by a Commission appointed by the Ministry of Public Instruction, and its report, which has been drawn up by Comm. Boni, has just been published. It was originally intended that the Via Cavour—a comparatively new street descending from the railway station—should cross the open area of the Forum by a bridge superseding the present road which runs on a viaduct between the arch of Septimius Severns and the Capitol, and cuts off the temples of Concord and Vespasian from the rest of the Forum, thus ruining the view of the north-west end of it. But the recent extension of the area of excavation has rendered such a bridge almost impossible, while, owing to the removal of the street which passed in front of the Curia and covered the site of the Comitium, the present road has become more inconvenient and dangerous than ever, owing to its narrowness and the sharp curves which it makes; and, being an important artery of communication (as a glance at the plan of the city will show), it has a good deal of traffic to carry.

The Commission does not discuss this point, but contents itself with recommendations with regard to the Via Cavour—which can, it now seems to be agreed on all hands, only be carried to the Piazza Venezia, and under no circumstances across the Forum.

The municipal engineers desired to take it close to the back of the Curia (now the Church of S. Adriano) and across the site of the temple of Venus Genetrix, which occupied the centre of the Forum of Cæsar. But the Commission's report urges that the sites of the Imperial Fora, which are to a considerable extent covered by modern streets and buildings, should be respected (in order not to prejudice the possibility of their eventual exploration), and that the new prolongation of the Via Cavour should keep on the north-east side of the Forum of Augustus, and then run round two sides of the Forum of Trajan to the Piazza Venezia. From an archæological point of view, there is everything to be said for the recommendations of the Commission, though the engineering difficulties may be considerable, inasmuch as the slopes of the Quirinal come right down to the north-east side of the Imperial Fora, the hemicycle of the Forum of Trajan being, indeed, built right against the hill.

An interesting discovery has been made in the Church of S. Maria Maggiore, by Sig. Arduino Colasanti. (*Tribuna*, July 12.) On the upper part of the walls of the basilica, above the present flat gilded ceiling, which was completed by Pope Alexander VI. (1492-1503), are remains of frescoes which appear to belong to the end of the XIIIth century. On the two side-walls of the nave, and on the upper part of the wall over the triumphal arch, are the busts of Saints on a blue ground in large medallions, while a medallion on the south-east wall, over the main entrance, has a representation of the *Agnus Dei*. Above these medallions is a line of small arches, shown as if constructed in coloured marbles, and resting upon pilasters, with acanthus leaf capitals; and above these again a line of rosettes between red and yellow bands.

These frescoes are works of considerable power, and, though inspired by classical models, are by no means lacking in life and vigour, while they reveal careful calculation on the part of the artist of the effect that they ought to produce at a considerable height above the floor level. They possess the characteristics of the Roman school of the latter half of the XIIIth century, and present several points of similarity with the frescoes of Pietro Cavallini in S. Cecilia in Trastevere, discovered only two or three years ago, and unluckily quite inaccessible to the public, situated as they are in the nuns' choir.*

We know, too, that Pope Nicholas IV. (1288-1292) restored the church of S. Maria Maggiore; indeed, the mosaics of the apse were executed by his order, and in them he appears as an adorer of the Virgin at her Coronation; while an inscription set up by him recorded that "he restores the Virgin's ruined fane, and the old church is made new."

On the other hand, Sig. Colasanti notices that the frescoes of S. Maria Maggiore are less fine in execution than the other known works of Cavallini, and declines to pronounce a decided

* *Cf.* Hermanin in *Gallerie Nazionali Italiane*, V. (1902), 61.

opinion as yet. In any case, the discovery is one of considerable importance for the history of the evolution of Italian art.

THOMAS ASHBY, JUN.

BEAR-YARD AND ARCH-ROW, LINCOLN'S-INN-FIELDS.

THE houses in Bear-yard and Portsmouth-place, a passage leading from the yard into Lincoln's-inn-fields, with some in Portsmouth-street, are being pulled down. One of the houses, No. 2 in the street, formerly Louches-buildings, and now named Lincoln's-inn-fields Chambers, is noteworthy as being the last remaining house of Arch, or West-row, built by Inigo Jones, that has retained its original front in red brick, though the top story is a subsequent substitution, seemingly, for the attic above the blocking course. The three pilasters have Ionic capitals with hanging wreaths or swags; the middle one has an ornamented band bearing a fleur-de-lys; on the similar bands of the two other pilasters are roses displayed. Those badges, carved in stone, commemorate the fact that when Inigo Jones laid out the Cup, or Cop, and Purse-fields, under the commission issued in 1618, he began on the west side, including part of Great Queen-street, the site of the Pightells and Purse-fields, which belonged to the jointure of the Rose and Lily Queen, Henrietta Maria. Jones made an archway across the end of Forfue, or Fortifue-lane—now Sardinia, formerly Duke-street (1648)—leading from Fyckett's-fields through the Purse-fields, and so alongside Fortifue-garden to the Via de Aldwyche, now Drury-lane. The elevation of the house we cite gives some idea of what the whole row was originally like under his hands; for of the remaining houses six—namely, Nos. 50A, 50, 56, 62-3, and 65, have been re-built, and of five, Nos. 51-2-3, 61, and 64, the fronts have been changed and stuccoed, whilst Nos. 57-8, one house, has a stone front apparently of a later time, and Nos. 66-7 is Newcastle House, built by Captain Winde, a scholar of Jones's pupil and executor Webb, for the Marquis of Powis in or about 1686. But the pilasters remain of Nos. 51-2, 54-5, and 64, and in three houses of that group they still carry the rose and fleur-de-lys devices. On October 22, 1898, we illustrated the rare silver medal, by George Bower, struck to commemorate the pillage and burning on the night of December 11, 1688, of the Franciscans' Chapel in Duke-street, since the Sardinian chapel or church of SS. Anselm and Cecilia. The medal, presented to William and Mary on their accession, bears on its reverse a beautifully wrought relief, showing Arch-row with its old elevations, the forecourt walls with their gate-piers, and the wooden posts and rails of the square wherein the Protestant mob are burning crosses, etc., from the chapel, which with the Friars' house, now No. 54, the Presbytery at the arch-way, is depicted as in ruins. There, as at Covent Garden, Inigo Jones's designs were not carried out in their entirety; a plate, attributed to Hollar, was found a few years ago by Mr. H. Fancourt, of Highbury, which, as he considers, delineates the architect's original designs, whereof only that for the west side of the square was completed as he had intended. Timbs records that Inigo Jones built Portsmouth House in the south-west corner of the Fields "for the Earl of Portsmouth." The so-called "Old Curiosity Shop" of Charles Dickens is a reputed relic of the Duchess of Portsmouth's dairy-house; the Ordnance Survey marks Portsmouth-place as being the site of Portsmouth House.

The inner square of Bear-yard is the site of Charles Gibbons's tennis court, opened as a theatre by Killigrew and the King's company on November 8, 1660, with a performance of "King Henry IV." The remains of that play-house, which should not be confused with the adjacent Duke's Theatre, in Lisle's tennis-court, Portugal-street, were discovered after a fire on September 19, 1809, and are illustrated in Wilkinson's "Londina Illustrata." Some slaughter-houses erected on the site gave way fifteen years ago to the casual and receiving wards of the Strand Union, built after designs by the late W. S. Cross.

POLICE BUILDINGS, SEDGLEY, WOLVERHAMPTON.—The new police buildings at Sedgley were opened recently. The plans for the work were prepared by Mr. Cheadle, the County Surveyor, and Messrs. H. Gough and Sons, of Wolverhampton, were the contractors. The total cost of the buildings was 5,000*l*.

BRAUWEILER ABBEY.

SITUATED at about a mile from Königsdorf Station, near Horrem, and at about half an hour's train journey from Cologne, on the Aix-la-Chapelle line, this striking church attracts the attention of the traveller on account of its splendid grouping of towers, lantern, and lofty spire, and its commanding position on the top of a hill overlooking the great expanse of flat country below.

The first structure on its site was a timber chapel of small dimensions discovered by a rich man in a wood, and consecrated to St. Medardus. The Count Palatine Hermann, whose castle stood at Brauweiler, caused the chapel to be rebuilt in stone, and this was consecrated by Archbishop Warinus of Cologne (976-85). The Count's son and successor, Ezo, who married Matilda, daughter of Otto II., resolved to build a monastery at Brauweiler, and on April 14, 1024, the foundation-laying was performed, a little to the north of the site of the little chapel, by Archbishop Poppo von Stablo, and Archbishop Pilgrim consecrated the church on November 8, four years later.

In 1048 it was necessary to enlarge the church and buildings, and Abbot Ello laid the new foundation on June 30 of that year. The third abbot, Wolfhelm (1065-91), richly decorated the church, and finished the fabric.

About the middle of the XIIth century buildings around the church were commenced, and in 1141 an altar was dedicated, in the west tower, to St. Michael—apparently a not unusual place in churches in Germany for altars to that saint.

The aisles were also vaulted about then, and several columns erected and others strengthened in the nave, with buttresses outside. No definite plan seems to have been followed for a while, the old work and the new mingling curiously, and new work extending west without being finished. About 1196 Abbot Bertram of Anrath planned an extension of the church, and raised funds in the Cologne diocese for the work. The next abbot (Godesman) continued his predecessor's labours, and in 1200 the whole of the east end was rebuilt, from east of the choir to the transepts, the choir being extended 12 ft., but the old crypt was not altered. In the same year three new altars were consecrated in the crypt.

The works were left, in 1226, unfinished, the south turret of the tower being only at part of its height, and covered with a provisional roof. The northern one was less high, and was later on lowered to about half the height of the choir and the foundation of the west tower was laid, but not more.

An organ was placed on the north side of the church at the end of the XIVth century.

In the XVIth the original vaulting gave place to a Late Gothic one, shortening the interior by 4 ft., but raising the nave by that amount.

In a great storm in 1606 the west tower fell in and greatly damaged the roof, and the steeple was restored in 1629.

A decree of Napoléon, in 1802, refounded the Abbey, and in 1806 the church was made parochial. Since 1815 the buildings have been government property, and are now a reformatory and house of correction. The paintings and altars and carvings, as well as the beautiful cloisters, are alone worth a journey to go and inspect.

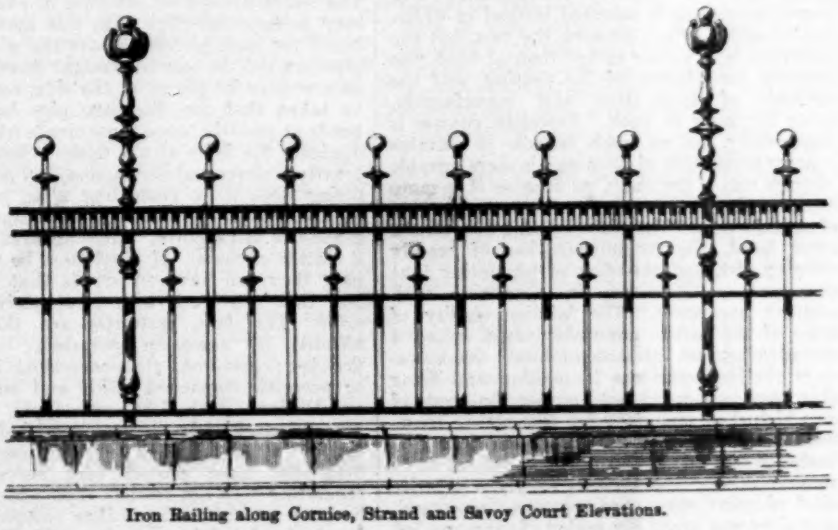
The restoration of the church was commenced in 1860, and the works were practically completed in 1895.

J. A. R.

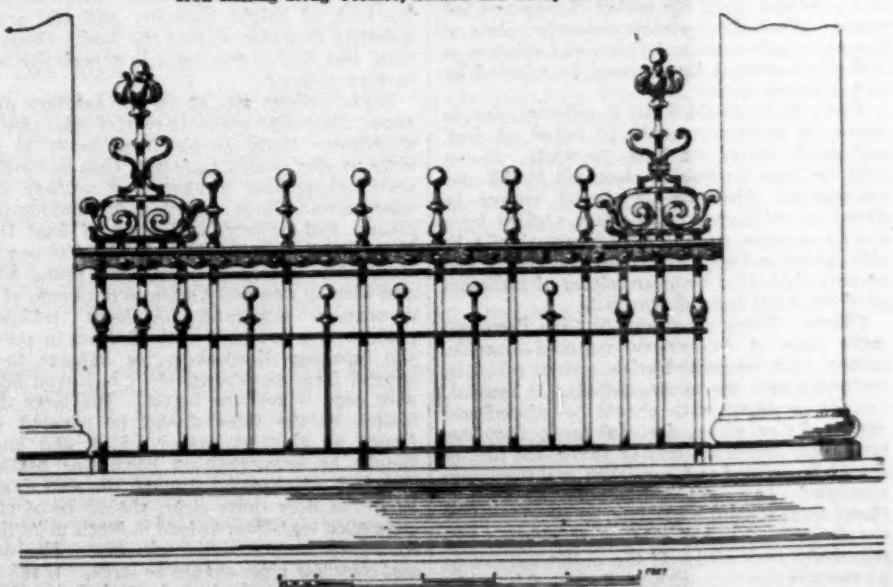
IRONWORK IN THE SAVOY HOTEL EXTENSION.

THESE two drawings show some of the wrought-iron work balustrading carried out at the Savoy Hotel Extension by Messrs Starkie Gardner, from the designs of the architect, Mr. Collcutt. They form good examples of work of the kind which has character and interest without eccentricity.

The railing along the cornice is a large piece



Iron Railing along Cornice, Strand and Savoy Court Elevations.



Railing between Columns of North Wall (South Block).

Ironwork in Savoy Hotel Extension.

of work, as when finished it will extend from the eastern end all along the Strand frontage, returning along Savoy Court, and it is then carried to the western extension round Herbert's Passage, finally ending on the south side of the building; a length in all of nearly 500 feet.

SANITARY FITTINGS.*

In bringing before you once more the question of Sanitary Fittings, which has so often been discussed at your meetings, I confine myself to those connected with the most economical and common-sense method of disposing of sewage, the water-carriage system. Till a comparatively recent period all water-closets were, as a rule, placed in the darkest and most out-of-the-way corners, shut off alike from light and air, and with no escape for the effluvia except into adjoining rooms; a state of matters only, alas, too common still. Water-closets, baths, lavatories, and sinks were, besides, all connected with the same soil-pipe, and were also inclosed in wooden linings which soon became sodden with filth, and gave off most offensive smells; water cisterns and storage tanks were placed where they were bound to receive foul gases from closets and drain-ventilating pipes; and the ground underneath the house contained a perfect net-work of soil-pipes. Now, all this was exactly the opposite of what ought to be the case. In an ideal building all fittings and drains should be designed and arranged so that waste matter of every kind may be carried outside as quickly as possible, and the necessary rooms and appliances should be so placed against outer walls that they may receive the maximum amount of light and air. . . .

Baths.—These, for public or for the best private work, should be of enamelled fire-clay; but for general use, the material most to be recommended is cast-iron porcelain-enamelled, *i.e.*, with the inside coated with white porcelain enamel which is practically incorporated with the iron by fusion in a muffle furnace. Almost equally good is cast-iron vitreous-enamelled, where the coating is coloured instead of white. Confusion has arisen between the two, but the difference is of colour rather than of kind, the essential constituents of the coating, and the methods of application and manufacture, being the same in both. Porcelain enamel is more costly, not so much because it contains a larger proportion of silica and is more durable (though this is the case), as because it is more readily soiled by dust specks, etc., in the process of manufacture. The white coating has, on the other hand, the recommendation of readily showing dirt, and therefore of promoting that cleanliness so necessary in connexion with sanitary appliances. The inferior quality of some of the earlier porcelain-enamel raised a prejudice against baths of the kind; but nowadays the improvements in making and firing that have been introduced render the goods of any high-class manufacturer thoroughly trustworthy. The metallic enamelled and japanned baths, so common in this country, are not to be recommended. The surface, merely a superior kind of paint, very soon becomes discoloured, and gives way under the action of soap and hot water. What the porcelain-enameller aims at is such an adjustment of fluxes and silicates as will give a coating that cannot be affected by any ordinary means.

Every bath should have a roll-top edge to throw off moisture, should be raised on feet, and should be set out from the walls. It can thus be kept thoroughly clean all round and underneath. After use it should always be rinsed out with clean cold water applied by a sponge or clean cloth. Bath-rooms should be well lighted and ventilated; and they should also be properly heated by means either of radiators or of hot-water towel drying rails.

Closets.—Every closet should have floro and walls alike of impervious material—marble, mosaic, tiles, enamelled-brick, endeca (that is, embossed zinc sheets enamelled), or cement. Cement or plaster walls should be painted and varnished; or where, for cheapness, they are hung with American cloth or paper, the former should be painted and varnished and the latter varnished. Any wood used should be hard wood. Closet traps should, if possible, be what is called the P pattern, and should, if at all long, be separately ventilated. If the outlet require to go through the floor with an S trap, this ought to have a 2-inch ventilating connexion. Closets should never have wooden inclosures; the only wood necessary is the hinged seat, and this should be connected directly with the pedestal. The pedestal itself should stand at least 6 in. clear of the wall, so that it may be possible to sweep and wash all round. The pan and plug and the two-piece hopper closets may be said to be entirely gone, and the wash-out is, in consequence of its large soiling surface, fast following them; but, of the older types, the valve, or Bramah, pattern still holds its ground, and is, if properly made and fitted, a good enough arrangement. The most modern types are the wash-down and the siphonic; and either of these, of good design and properly fitted up, should give complete satisfaction.

Storage Tanks and Flushing Apparatus.—For perfect efficiency all houses ought to have storage tanks to furnish a supply for every purpose except drinking—drinking-water should always be taken direct from the main. These should be placed in the highest part of the building; should be of large capacity; should always have good-sized supply valves and overflows; and should have tight-fitting covers to prevent dust from getting in. They should be cleaned at least twice a year, and should have, on the pipe leading to the various fittings, a full-way, screw-down, stop-tap, to enable the supply to be cut off for repairs, etc. The actual flushing process may be accomplished in three different ways:—(1) By what is known as a regulating supply valve, fixed over, or at the side of, the water-closet, and fed from the storage tank referred to. Regulating valves of good construction are noiseless, and with a good and ample water-supply very suitable and convenient. (2) From a cistern 4 ft. to 6 ft. above the closet. (3) From a cistern immediately above and behind the closet. Cisterns fitted some distance above the closet should be placed directly over the pan; and the connecting pipe should be, by preference, of brass or copper, straight, or with as few bends as possible, from 4 ft. to 6 ft. long, at least 1½ in. in external diameter, and set at least 1 in. clear of the wall. The centre window so common in closet-rooms may perhaps interfere with this arrangement, but if the tank be fitted above the window the pipe can still be carried straight down. If the cistern *must* be placed at the side, care should be taken that the discharge pipe has as few bends as possible, since these create friction and diminish the force of the flush. Cisterns vary greatly in shape and design, and over no sanitary fitting does more grumbling arise, sometimes on the ground of noise, and sometimes on the ground of bad quality. Here again it is largely a matter of price. If purchasers be willing to pay, they can have an article that will last, and that will work with comparatively little noise. The best materials are those least affected by corrosion—porcelain; enamelled fire-clay; cast-iron, glass-enamelled internally or porcelain-enamelled inside and outside; or wood, lined with lead or copper. Cisterns placed immediately above and behind the pan, though at first looked on with considerable disfavour, have proved very successful. A regulating stop-tap renders them almost noiseless, the larger inlet more than compensates for the lack of height pressure, and the greater quantity of water washes the basin, clears the trap, and flushes the drain in a perfectly satisfactory manner.

Sinks.—Sinks are, of all our sanitary appliances, those that probably receive least care and attention. Many people seem never to consider, or else readily to forget, that badly-fitted and foul-smelling kitchen and scullery sinks may cause serious pollution of cooking-pans, dishes, and cutlery, and even of food itself. These appliances should be made of strong fire-clay, white glazed all over, with round edges, and with no woodwork settings or casings of any description whatever. A loose teak-wood grating may be placed in the bottom to prevent the breaking of crockery, or damage to the enamel from saucepans, etc.; but even here a wire cage is perhaps better. The large drain boards at the sides should be covered with tinned or nickeled copper. Sink and boards should be supported on cantilever brackets. The trap, discharging through the wall so as to leave the floor quite clear, should be of glass-enamelled cast-iron, as lead is much more liable to injury from external violence. The waste and overflow pipes should be large. If the sink be placed a few inches clear of the wall, the latter should be lined with white glazed tiles extending from the floor to 12 ins. above the top of the sink; and if it be placed against the wall there ought to be a glazed fire-clay back at least 12 in. high. All angles, crevices, and dark corners should be scrupulously avoided.

The absolute necessity of using the highest class of sanitary appliances, of having these arranged and fitted up in accordance with hygienic laws, and of following the best skilled advice that can be obtained, are matters that cannot be too strongly or earnestly impressed on the general public.

* Part of an abstract of a paper read by Mr. John Shanks at the Sanitary Institute Congress in Glasgow.

ARCHITECTURAL SOCIETIES.

Manchester Society of Architects.—Some members of the Manchester Society of Architects recently made a three days' visit to Oxford. Arriving on Friday night, the whole of Saturday was spent in visiting the Town Hall and six of the colleges. After service on Sunday at the Cathedral, the new church for the Cowley Fathers was seen. The afternoon was spent in punting down to Iffley, where some hasty jottings were made of the famous Norman church and of the charming old rectory. Monday was devoted to sketching at St. John's or Magdalen.

Books.

Modern Cottage Architecture. By various architects. Edited by Maurice B. Adams. London: B. T. Batsford. 1904.

No book could possess a title more alluring to architects than this work, for no subject lends itself to illustration more attractively than cottages. There is, however, such endless variety to be met with in these smaller dwellings that it becomes necessary to hold some principle or aim in view which will exercise restraint in the selection of examples, an element which is lacking in the publication under notice.

Here is a collection of fifty exterior views reproduced from various well-known architects' drawings, prefaced by "Notes Concerning Cottage Building," by Mr. Adams. Numerous plans are given, but the selection is wholly one of picturesque designs for lodges and cottages gathered from a wide range, with no other object than illustrating certain excellent buildings produced in recent years. No single type of dwelling predominates, nor does the book serve to indicate the tendency of present-day cottage design.

The preface emphasises certain difficulties which beset the path of the cottage builder, consequent upon the economic conditions of our times; but the illustrations do not attempt in any way to present solutions of the problems. The author avoids all reference to questions of cost, which is generally the first factor in the erection and maintenance of this kind of property. Little is said about the types of plan necessary to produce inexpensive or artistic designs, and, practically speaking, the question of interior treatment is omitted entirely.

Much useful information is given in the preface, together with some practical hints upon matters of detail. But a book of this description should be ahead of the times. Reference is made briefly to the septic tank treatment of sewage, which is more suited to larger houses, but no information or suggestions are given as to "surface" disposal of wastes, such as is found most convenient and simple for cottages in country places. Ferro-concrete is lightly touched upon, but it is one of the few methods yet in view which will, in course of time, help to overcome the financial difficulty of the problem, when brought more into general use. Papering is recommended in preference to the distempering of walls, which we do not think meets with general acceptance.

Taken as a whole, this publication is an interesting record of some excellent cottage architecture of a good class, but we do not anticipate that any direct purpose will be served by its appearance.

Bayeux Cathedral. By Rev. R. S. Mylne. Bell: Cathedral Series. 1904.

This little handbook will be useful to visitors to Bayeux and the neighbourhood. It contains much information about the cathedral, and useful references to the churches of the district. No mention is made, however, of the great and important abbey-church of Cérisy-la-Forêt, which is within an easy bicycle ride; Ouistreham also deserves detailed description. The illustrations from French photographs are

admirable; equally bad are those by some amateur, taken with a snap-shot camera without rising front or swing-back; those of Thaon and Ryes, with all the windows lurching inward towards the central tower, are particularly discreditable. In another edition the writer would do well to consult more recent authorities; especially Ruprich-Robert's "Discours à la Société des Antiquaires de Normandie," 1882. He would also do well to consult Viollet-le-Duc's "Dictionnaire Raisonné," II., 360, where he would learn that the architecture of Bayeux choir is no more French than that of Lincoln or Salisbury. The book differs from the rest of the series in possessing an introduction on the principles of Gothic architecture. This needs considerable revision. We are told that if a Gothic vault falls, it will crush all the pillars and arches below. How is it, then, that the piers and arches are all standing at Tintern? The vaults fell long ago. There is also a little too much sermonising, and not always good sermonising—*e.g.*, we are told that the combination of Norman arcade and Gothic clerestory in the cathedral nave is "so beautiful in every way that in gazing thereupon a deep sense of spiritual repose is shed over the soul of man." This sort of thing is not wanted in an archæological handbook.

Ancient and Modern Furniture. By JOHN W. SMALL. Stirling: Eneas Mackay.

WE have seldom met with a book the title of which was more misleading. The author should have called it, surely, "Furniture, Ancient and Modern." The section on modern furniture consists exclusively of illustrations of his own designs, or, as he says in the preface, "examples of modern furniture which during the last few years have been designed and executed for manufacturers and others from full-sized drawings supplied by the author," though what he means by "designing from full-sized drawings" we are at a loss to imagine. Not content with the profuse illustration of his own work, the author naïvely tells us of one piece that "it forms a very imposing piece of furniture," and of another "that it has had great success on the market, as far as the number made can be taken as a test"; and the reader is tempted to exclaim that he can well believe it.

It is only just to add that the illustrations of old furniture are well and carefully done, and often of great interest; but they are far too few for a book which does not profess to deal exclusively with any particular period. Had the second section been illustrated with the same frugality from the best examples of modern work it might have been of some value and interest.

Anglican Innocents in Spain. By F. E. SIDNEY, F.S.A. London: Simpkin, Marshall, Hamilton, Kent, and Co., Ltd. 1903.

HOW COMES it that Spain fails to make herself attractive to the tourist? Why does not that class, English and American, that visits Italy, make a diversion by crossing the Pyrenees? The climate is not, it is true, so agreeable as the climate of Italy. But there is much beauty in the later spring and autumn. The matter of language is but a superficial difficulty, and is not a serious bar to travel nowadays. Spanish architecture and painting are of unquestioned interest. The characteristics of the people are various and picturesque. Yet, despite everything that may be urged, Spain fails to appeal to the popular imagination. She has produced—and we think the reason of her failure lies here—no great personalities that touch the common sentiments of humanity. She has neither a Michelangelo nor a Savonarola. In the place of the one she offers us Velasquez, whose talents, however pre-eminent, can reach but the few. In place of the other we have the spirit of the old Iberian fanaticism that found outlet in the Inquisition—the Iberian ferocity that still holds carnival at the bull fight; a legacy recorded upon the frescoes of the Palace of Minos four thousand years ago, marking the trail of this tribal migration from the shores of the Black Sea.

Much of the neglect of which we speak is due, no doubt, to the scantiness of a literature calculated to inform. George Borrow's "Bible in Spain" still remains a classic. Richard Ford's "Gatherings in Spain" and the guide-books he compiled for Murray provide information of attractive interest. George Edmond Street has given us his "Gothic Architecture in Spain," wherein he laid hold of the vital elements of her architectural development, following the growth of the Romanesque and Romantic periods in the north, rather than the accidental creations of the Saracen at Seville and Cordoba. At the same time it may be questioned whether Street was entirely fitted to do justice to the licence by which the Spanish builder sought and found the picturesque. Finally we should not forget to mention Lord Leighton's admirable estimate of Spanish art, contributed in a lecture to the students of the Royal Academy. Yet our information must be considered meagre. And so to fill the void, pleasant and communicative travellers describe to us the Alhambra, the Alcazon, and the bull-fight, while they trust to the camera to fill up the blanks. Mr. Sidney in no way falls below the standard of this class of production. We would point out, however, that if the Saracen element in architecture is to be exclusively admired, the home of this, and of its purest examples, may be sought for in the French North African province of Mauritania. The Tower of Mansourah at Tlemçen is perhaps one of the finest towers ever erected in any style.

Stained Glass. By LEWIS F. DAY. London: Chapman and Hall, Ltd. 1903.

THIS small book of just over 150 pages forms one of the Art Handbooks to the Victoria and Albert Museum, and is published for the Board of Education. It is a capitally written and illustrated guide by a well-known authority on a most fascinating subject, and the opportunity has been wisely taken of illustrating the book with examples for the most part from those in the Museum, and, as is explained in the preface, of drawing attention to the fine series of tracings now in the Art Library made by the late Octavius Hudson. The author traces the history of stained glass in its various forms from Early Gothic to Renaissance, and at the end of the work is a useful inventory of the examples in the Museum, arranged as far as is possible in order of date. The illustrations are throughout excellent; particularly good are some of the examples given of XIVth century quarries and grisaille. Equally interesting in their way are the reproductions in Chapter VII. of Renaissance drawings for armorial and domestic glass.

Dunstable: its History and Surroundings. By WORTHINGTON G. SMITH. London: Elliot Stock, and the Homeland Association, Ltd. 1904.

THIS forms Vol. III. of the "Homeland Library," and contains a very full account of the chief points of interest of this historic Bedfordshire town, and much information concerning the prehistoric remains, natural history, geology, etc., of the almost equally interesting district of which it forms a centre. Three chapters are devoted to the fine fragment of the nave of the Priory church, illustrated with two plans and photographs. One plan shows the arrangement as in 1850, and the other includes a conjectural restoration of the monastic church and cloister. Much no doubt of great interest would result if the site of the presbytery were examined; and, unlike many such sites, it is free of obstructions, and has not, we believe, been built upon. Although much has been removed at various times, as in other cases of the kind, sufficient should remain to give us a pretty accurate idea of how this fine church was arranged. The author contributes more than one careful drawing towards the illustrations, but the majority are from photographs. A very beautiful pulpit and canopy at Edlesborough is one of the best. Two excellent maps of the town and district are placed in a pocket at the end of the book, and help to complete a very interesting and carefully-prepared monograph.

Slingsby and Slingsby Castle. By ARTHUR ST. CLAIR BROOKE. Methuen and Co. 1904.

THE Rev. A. S. Brooke has printed in a good and convenient style the records of his parish, his church, and the adjacent manor. It was not written, we may suppose, with the idea that it would be widely read; but it should appeal to those who dwell in the historical neighbourhood to which the records refer; and it is certainly very desirable that such records should be written. We noticed some little while since, we remember, a "History of Luton Church," compiled by its Rector, a similar class of work of unquestioned interest, although the interest was for the most part a local one.

Antwerp: an Historical Sketch. By WILFRED C. ROBINSON. London: R. and T. Washbourne. 1904.

BYZANTIUM—Venice—Antwerp, these are the centres around which the modern world has revolved, for we must include its commercial with its social progress and with those interests which develop with society. Indeed the development of the arts have always run concurrently with commerce. We wish we could add that the converse were equally true.

Antwerp—the city on the wharf—became famous at the beginning of the XVIth century, under the reign of the enterprising Charles V. "Antwerp was then truly a leading city in almost all things, but in commerce it headed all the cities of the world," says an old chronicler. Bruges, the great banking centre, yielded her position, and the Hanseatic merchants removed to the banks of the Scheldt. "I was astonished and wondered much when I beheld Antwerp," wrote an envoy of the Italian Republic, "for I saw Venice outdone." In what direction Venice was outdone is not recorded. Not in her architecture at least; scarcely in her painting. We cannot concede a Tintoret for a Rubens. Yet, inasmuch as Antwerp was the home of Metsys, of Rubens, Van Dyck, and the Teniers, the home also of Christopher Plantin, the great printer, her glory is not to be sought in trade alone. She is still remembered as a mother of art and of letters, while her mercantile pre-eminence belongs to a buried past. Important and interesting as the history of the city is, we cannot touch on it further. We must leave our readers to follow her fortunes, political and religious, under Mr. Robinson's able guidance.

Hampshire. By J. CHARLES COX, LL.D., F.S.A. Illustrated by M. E. Purser. London: Methuen and Co. 1904.

THIS is one of "The Little Guides," convenient in form and well printed. Mr. E. H. New has contributed the illustrations to most of the books of this series. The simplicity of his style is well known, and it is one that is eminently suitable for conveying information without prejudice to his charm as a draughtsman; far preferable, in our opinion, to a manner of illustration that is much in vogue, where the topographical interest has to be sought for amid a riot of clouds. Miss Purser, who is responsible for the drawings in this book, is a follower in Mr. New's school. The guide is conveniently arranged alphabetically and not in routes. The antiquarian interests of the county have been treated by the author with both knowledge and appreciation.

Near Oxford. By REV. H. T. INMAN, M.A. Oxford: Alden and Co., Ltd. London: Simpkin, Marshall, and Co. 1904.

THIS small book is a good example of the kind of guide which has of recent years been the outcome of increased interest in places lying off the beaten track, formerly but little known except to the enthusiast, but now more readily reached by bicycle and motor. The letterpress is the result of the author's own personal visits and notes, and the majority of the illustrations are from photographs specially taken for the work. Some of the best are those illustrating the churches at Ewelme, Cassington, Eynsham, Thame, and Burford. The district included has a radius of about fifteen miles from Oxford, an extremely rich one in examples of both church and domestic work. It will be found a good guide both for the amateur (for whom a glossary of terms is provided) and the architect and student desirous of learning the chief points of interest to be found in each village. An index is given, and also a clear map of the district at the end of the book.

Adventures among Pictures. By C. LEWIS HIND. London: Adam and Charles Black; 1904.

WE do not see where the "adventures" mentioned in the title come in; the book is a volume of collected papers of criticism on pictures and painters, mostly reprinted from the *Academy*. The author writes pleasantly and sympathetically about painting, in an easy-going manner, and those who are interested in the art will enjoy turning over his pages, though they will hardly find any important questions of art-criticism settled in them. There is a little too much of the tendency of the modern English art-critic never to allude to the Royal Academy

without a sneer. In Goldsmith's time the secret of acceptation as an art-critic was "to praise the works of Pietro Perugino"; nowadays it is to sneer at the Royal Academy. It is true that the Academy hangs a great deal of uninteresting work, and that it is somewhat narrow in its sympathies; but it is not the less true that from every annual Academy exhibition could be picked out a sufficient number of good pictures to make up a better collection than any other that is habitually to be seen in London.

The Country Gentleman's Estate Book, 1904. Edited and compiled by W. BROOMHALL. London: The Country Gentleman's Association (1903), Limited. 1904.

THIS book has a great quantity of varied information connected with landed estates. The part which will be most useful to our readers is that entitled Building Memoranda. In a short space this contains a number of facts which the land agent, when he has to turn his attention to building, will find useful.

Timber: Growth and Structure; Felling, Converting, and Buying, etc. Edited by PAUL N. HASLUCK. London: Cassell and Co. 1904.

THIS little book of ninety-six pages contains, according to the preface, "a comprehensive digest of the knowledge of timber scattered over seventeen volumes of *Building World*." The compilation is well done, and the book includes a large amount of useful and interesting matter, but it is questionable whether the editor was wise in confining himself to the matter which had already appeared in his periodical. In the chapter on "Measuring Timber" nothing is said as to the allowances made for bark in round timber, or as to the special methods adopted in the sale of certain woods, such as teak. The chapter entitled "Varieties of Builders' Woods" contains short but useful descriptions of the principal timbers used in building, but can scarcely be regarded as comprehensive, as no mention is made of jarrah, karri, maple, cedar, sequoia, and some other varieties which are now on the market. In the paragraph on page 66 the effect of knots in timber under tension and compression is not by any means clearly stated. These, however, are matters of minor importance. The book contains fifty-six illustrations, and can be recommended as a convenient and useful handbook, especially for students.

Subject List of Works on Electricity, Magnetism, and Electro-Technics in the Library of the Patent Office. Published at the Patent Office, London. 1904.

WE have received for review the "Subject List of Works on Electricity, Magnetism, and Electro-Technics, in the Library of the Patent Office." We can congratulate the compilers on the very careful manner in which they have done their work. Under the various headings the works are arranged in chronological order, and this arrangement is of great value to the historian as well as the inventor. The headings have been judiciously chosen, and the key given at the end we have found convenient. There are one or two minor headings which might be improved. On p. 18 we should have written "Darsonvalisation" instead of "Arsonvalisation," and on p. 206 we should have written "perpetual motion" instead of "perpetual motors." We notice, on p. 33, that the spelling of the author's name in a recently-translated German work has, very properly, been corrected. We have only noticed two misprints, namely, one on p. 69, where Mr. A. W. Heaviside's name is spelt "Heavyside," and the other on p. 112, where his brother's name is also wrongly spelt. On p. 167 we would have included Dr. Larmor's and Professor Rutherford's books under "Ions and Electrons."

Railway Maximum Rates, Charges, and Traffic Acts. By M. B. COTSWORTH. London: Bemrose and Sons. 1904.

WITH profits steadily falling off and tending towards the vanishing point, the manufacturing and trading public naturally search diligently for openings for retrenchment. Wages and cost of raw material affording no relief whatever, "expenses" are overhauled. Of these "railway charges" often forms one of the least satisfactory features, from a feeling of helplessness as to whether the charges are legal or not. It has seemed in the past almost impossible to get to the bottom of the railway companies' powers in this respect; but, armed with Mr. Cotsworth's little volume, the mystery becomes wonderfully simplified. The inquirer can very soon ascertain the charging limit of every company for any distance and for any description of traffic—always remembering that the item of "cartage" is an uncertain quantity not dealt with by the Railway Rates Acts.

A feature of this work is the free use of heavy type and italics for the accentuation of important passages, while the scales of rates are most exhaustive and comprehensive. Possessors of the earlier editions will have already appreciated all this, and they will find much additional information of value in this third edition. As an example of the thoroughness which characterises the work we may instance the new sections dealing with light railways. The authorised charges will be found (set out with the same careful exactness as the scales of charges for the main lines) applicable to all light railways which have secured Parliamentary powers. Many of these are not yet in existence, and some in all probability never will exist, but the author has apparently missed no undertaking authorised up to date.

Oil Engines: Their Selection, Erection, and Correction. By W. A. TOOKEY. London: Merritt and Hatcher, Ltd. 1904. (1s. net.)

THIS is a companion work to the handbook on "Gas Engines," reviewed in our columns last October. After an introductory chapter in which the author enters into a general explanation of the capabilities of oil engines and the manner in which they operate, successive sections of the book are devoted to "Selection," "Erection," and "Correction." These three chapters give much useful and reliable information which should be appreciated by intending purchasers, as well as owners, and attendants of oil engines. An appendix containing illustrations of some twenty well known types of oil engines is a very serviceable addition to the book, affording means of ready comparison between the various forms of such motors made in the present day.

Notes on Blacksmiths' Work. By MAJOR R. F. SORSBIE, R.E. Chatham: Royal Engineers Institute. (Agents: W. and J. Mackay and Co., Ltd., Chatham). 1903.

THIS pamphlet consists of a very businesslike collection of notes compiled for the instruction of officers and men of the Royal Engineers, whose duties frequently require them to superintend the work of blacksmiths, and sometimes to establish workshops and to teach unskilled men the essentials of modern practice. Detailed comment on a work of this character can scarcely be expected, but we may say generally that the subject matter is well selected, and that the individual notes are clearly and concisely stated. The book is divided into eleven chapters, dealing with such matters as the construction and equipment of the smithy; forging, welding, and otherwise treating wrought iron and steel; hardening and tempering steel; bench work of various kinds; and coach smithing. The letterpress is elucidated by a series of forty-one plates, containing no less than 230 figures, illustrating smiths' tools of various kinds and the manner in which they are to be applied. Although specially written for the Service, we confidently recommend this book to all who desire to obtain trustworthy information as to the work conducted in the smithy.

The Law and Practice Relating to Private Street Works, together with an Appendix, containing Particulars and Decisions of Cases. Reported by WILLIAM SPINKS, M.I.C.E. London: E. and F. N. Spon, Ltd. 1904.

THIS is rather a mixed kind of book. The first part contains portions of statutes, the second remarks on the law, and lastly there is an appendix giving a *précis* of different decisions. This is well done; but, on the other hand, the the value of judicial decisions is often much lessened to the reader when the judgment cannot be read in full. The absence of an index is rather a serious drawback to the work.

Saw Mill Work and Practice: A Book for Owners, Overseers, and Operators of Wood-Working Machinery. By W. J. BLACKMUR. London: William Rider and Son, Ltd. 1904.

IN this book the author deals with wood-working machinery from the standpoint of the actual user. It is no part of his programme to discuss the design and mechanical construction of such appliances, and the whole of the matter and illustrations relate to the everyday work of the saw mill. Although the greater part of the book is devoted to the care and operation of saws and sawing machines of various kinds, there are three or four chapters which deal with rotary cutter and fixed-knife planing machines, and with machines for special objects. So far as these subjects are concerned, the author is evidently writing on matters with which he has the familiarity begotten of long personal experience. The same cannot be said of the chapters on "Shafting and Belting," and "Motive Power." Many hints contained in the last mentioned chapters are both useful and practical, but it is manifest that the author possesses a very limited qualification to offer advice on the subjects in question, and especially on that of motive power. Considering the book as a whole, we must say that it is well worth the careful study of those who desire reliable guidance on the ordinary routine of the saw mill. It is to be regretted, however, that the work of the printer and binder has not been better performed.

Illustrations.

JUMIÈGES.

THE illustration of Jumièges Abbey shows the XIth century nave, as seen from the southwest. On the right is seen the western wall of the central tower now disappeared. Weatherings of three different roofs are seen on this wall. The XIth century roof of the nave rested on gabled transverse arches. These gables would naturally be built as flat as possible to diminish the weight on the arches. It may be inferred, therefore, that the lowest of the three weatherings represents the pitch of the XIth century roof. At some period a balustrade was constructed in front of the triforium arcade; marks of the balustrade still remain. A similar balustrade, also not of the original construction, remains in the triforium of the nave of the Abbaye-aux-hommes at Caen. The capitals, as is usual in the XIth century work of Normandy, are of Corinthian type, with the acanthus omitted; the cushion capital is rare in Normandy till the XIIth century. Illustrations of Jumièges towers and nave appeared in our issues of July 16 and August 6. Longitudinal and transverse sections of the nave are given in Ruprich-Robert "L'Architecture Normande," Vol. I., Plates 12 and 13.

SOME BRETON CHAPELS.

THESE illustrations are in connexion with an article appearing on another page, in which the buildings illustrated are referred to; with the exception of the gallery at Locqueffret, which is given as a typical example of Breton woodwork. It is probably taken from a demolished rood-loft, and is brightly coloured. The church also contains some very rich Renaissance altar-pieces.

The illustrations on Plate I. are from photographs by M. Villard, of Quimper; those on Plate II. from photographs by Mr. F. C. Eden.

HOUSE AT CROYDON.

THE lower portion of this house—erected about three years ago—is built of red bricks with a white flush joint. Stocks were employed in the upper portion, covered with rough cast mixed with a proportion of copperas before being rendered, sufficient to impart a biscuit tint. The woodwork was brought out to the general face of the work. The roofs are covered with thick rough-edged green slates.

Parts of the interior were panelled in soft wood of simple design, and painted mostly a stone colour. The architect was Mr. W. F. Harber.

EXMOUTH COTTAGE HOSPITAL.

THIS building has been recently completed at a cost of 4,000*l*.

The general contractor was Mr. Albert Hayman, of Exmouth. The sanitary work was executed by Messrs. Hubber and Son, of Exeter, and the heating by Messrs. Whippell and Row, of Exeter.

The ground plan is given. Upon the first floor are placed the kitchen and offices, and bedrooms for the staff.

Lifts communicate between the kitchen, ward, scullery, and cellars.

The architects were Messrs. Tait and Harvey.

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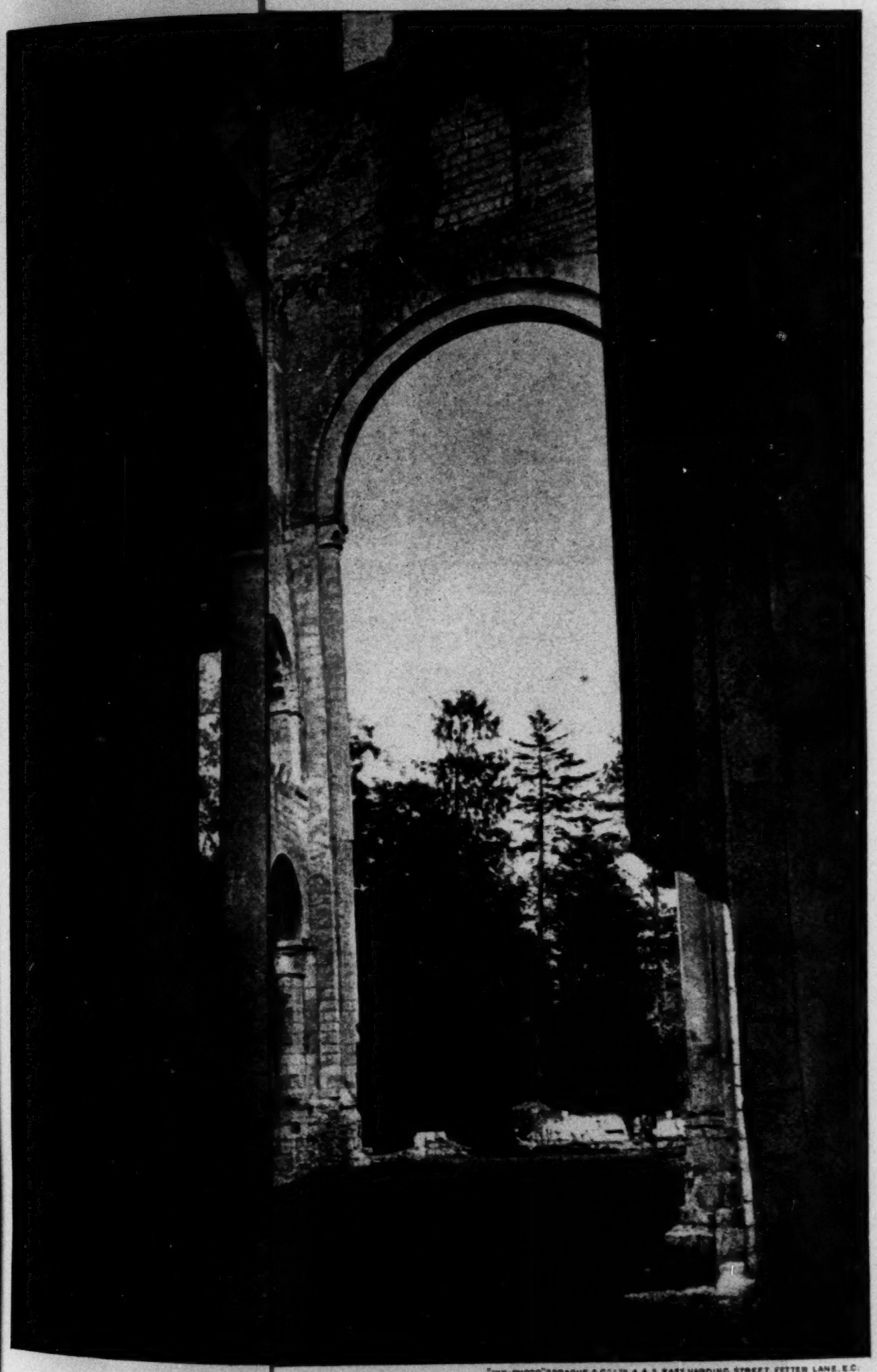

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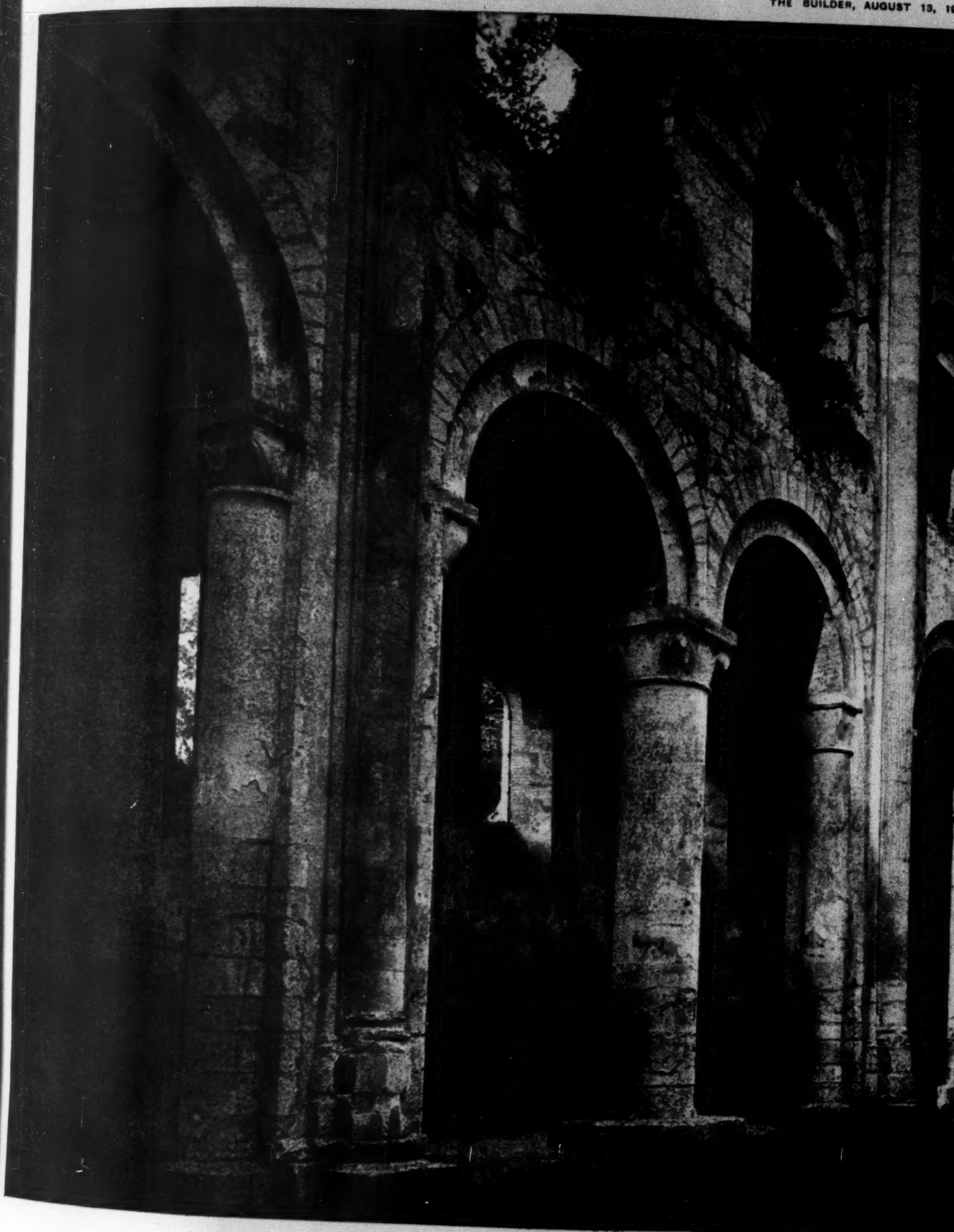

JUMIÉGES: NAVE, FROM WEST END

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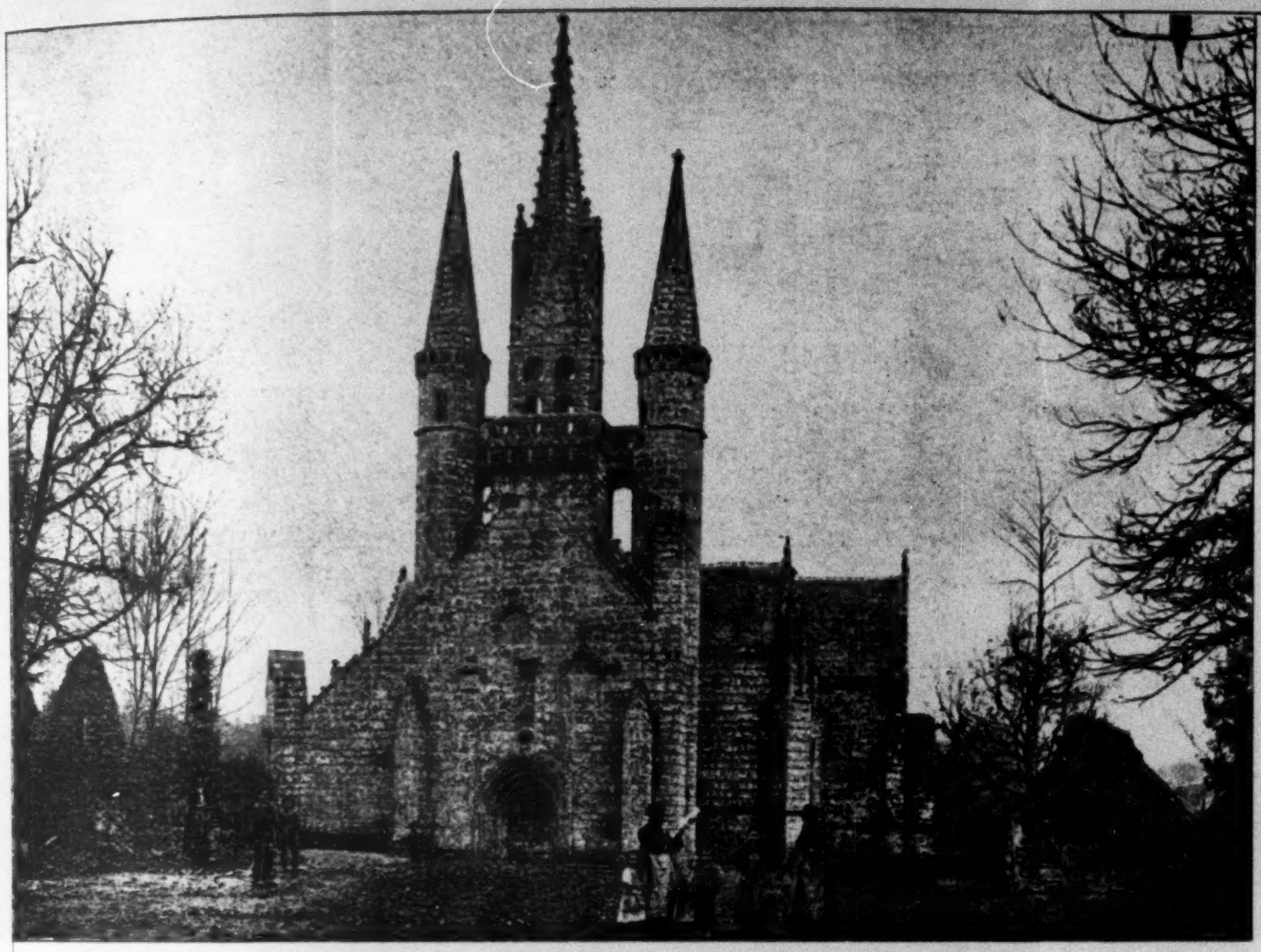

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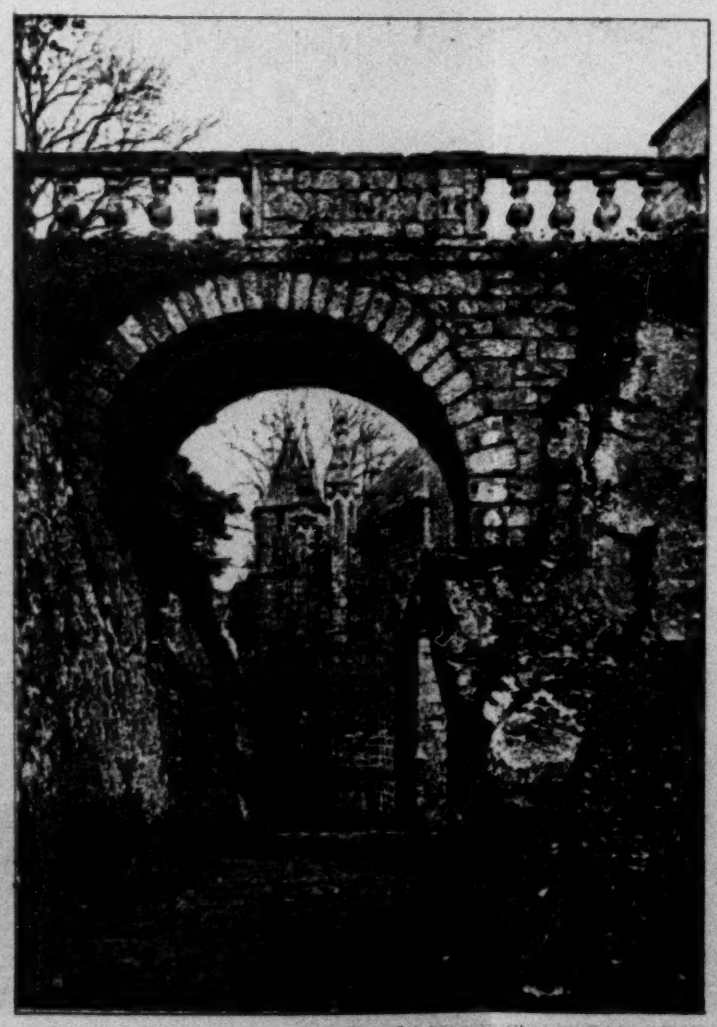

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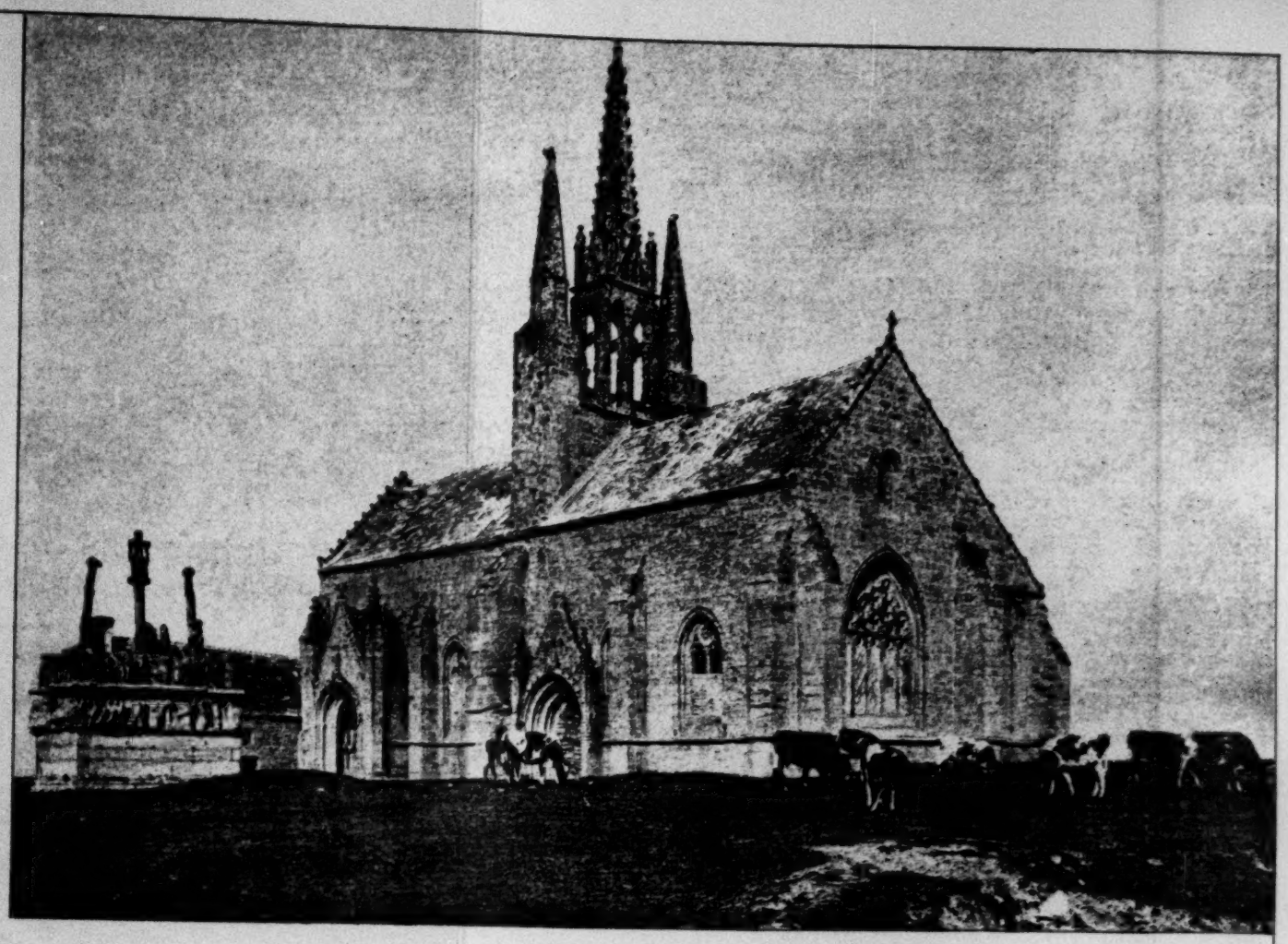

CHURCH AND CALVARY OF TRONOAN.

PENMARCK: NOTRE-DAME-DE-LA-JOIE.

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CHANCEL, ST. FIACRE.

ST. FIACRE: STATUE OF PATRON.

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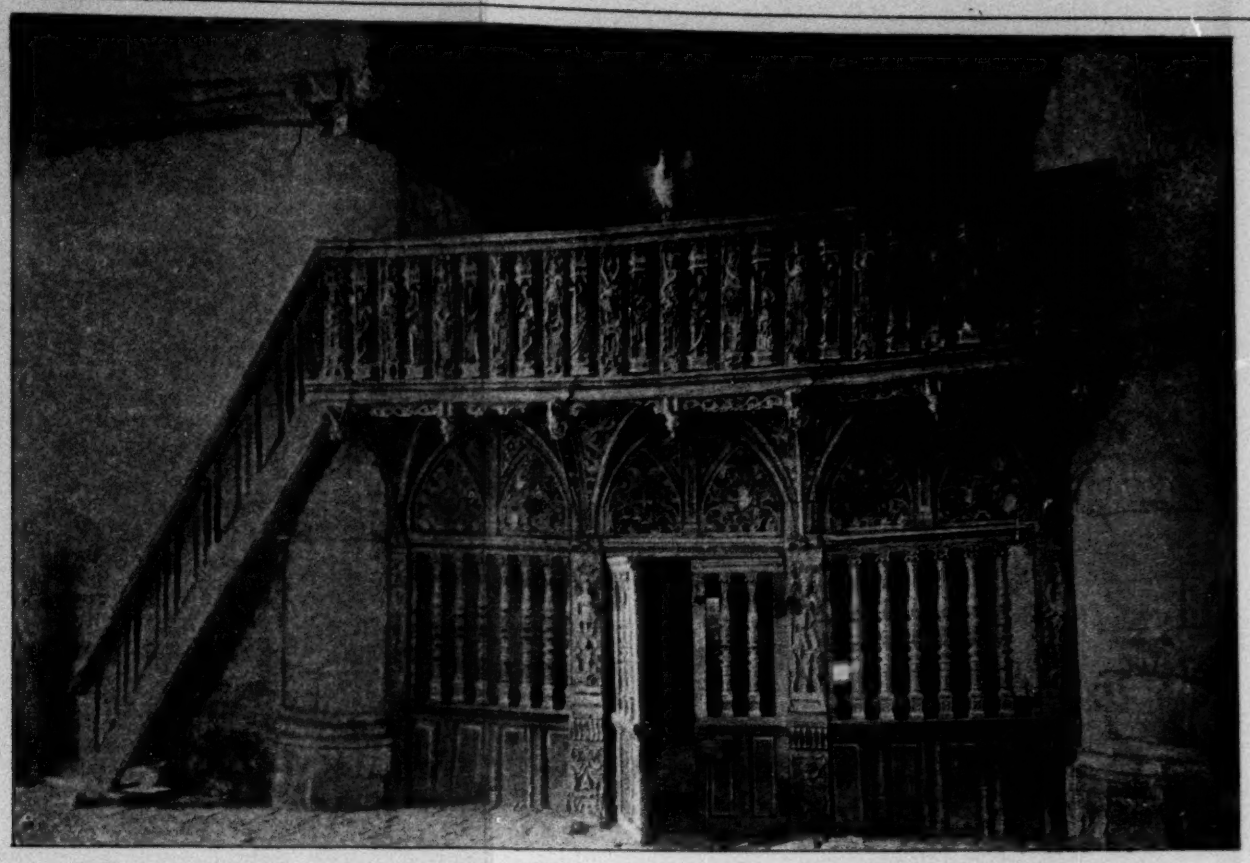

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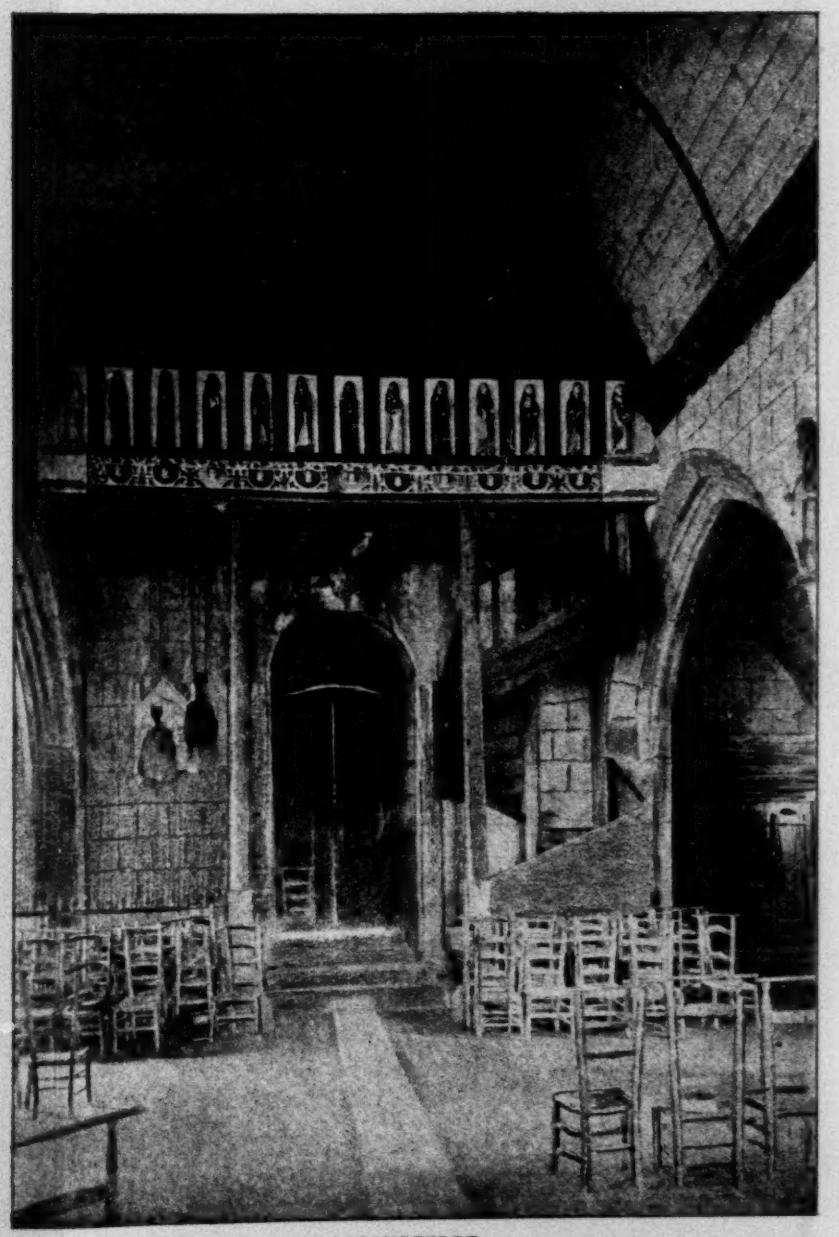

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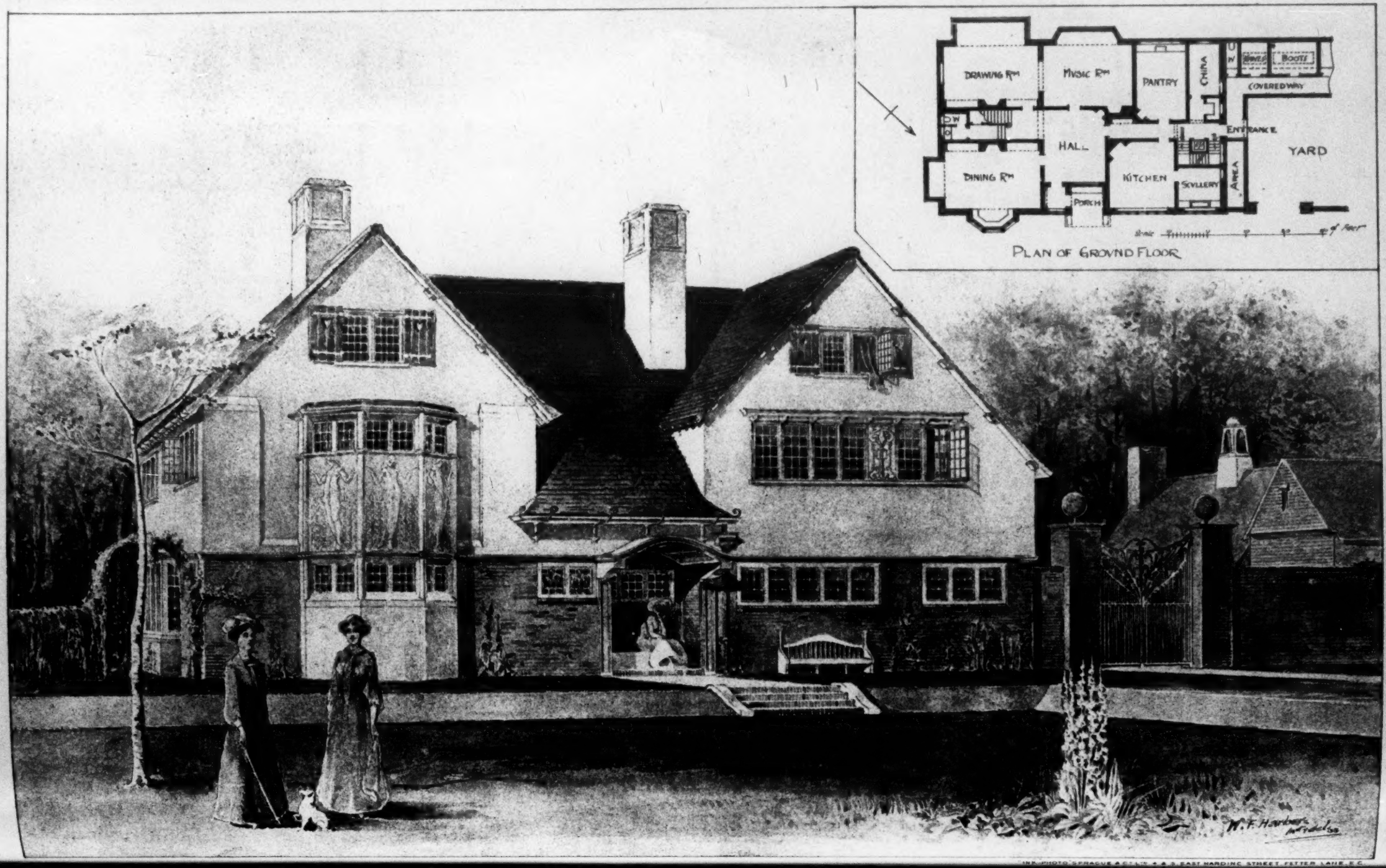

PLAN OF GROUND FLOOR

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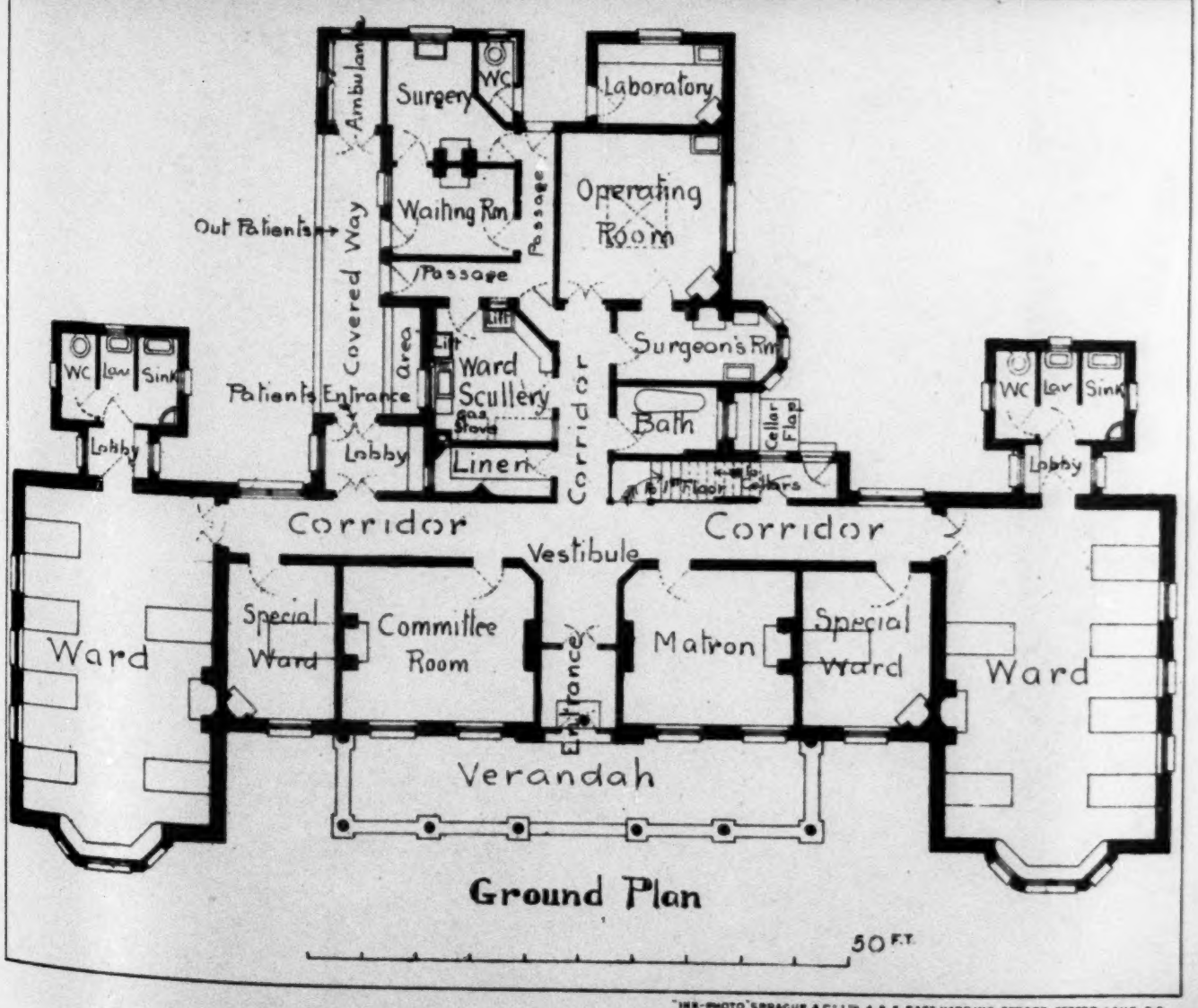

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EXMOUTH COTTAGE HOSPITAL.—MESSRS. TAIT & HARVEY, ARCHITECTS.

Low-Cost Apartments for Tipton

Tipton, Iowa, has a housing problem. To combat it, the city has erected 5,000 low-cost apartments, a free gift from Victoria, Texas, to match the charge is also the Victoria for the cost fire s adopt plan *Brow*

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COMPETITIONS.

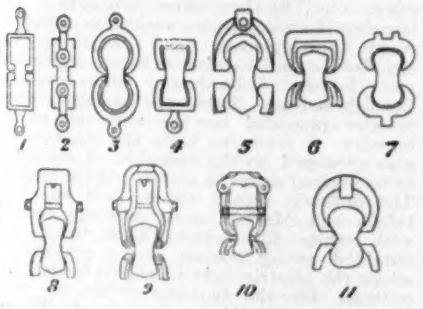
LIBRARY, TIPTON.—A special meeting of the Tipton District Council was held on the 29th ult. to consider the two competitive plans for the erection of a free library. Mr. Carnegie gave 5,000*l.*, and a scheme has been adopted whereby a free library will be erected on a site near the Victoria Park and a smaller one at Toll End to meet the requirements of the scattered character of the parish. A technical school is also to be provided. The plans considered by the Council were those of the free library near Victoria Park only. The first made provision for a town hall, swimming baths, and a technical school in the future, and the estimated cost was 3,305*l.* The second provided for a fire station and baths in the future, and the estimated cost was 3,500*l.* No. 2 plan was adopted by twelve votes to six. It was the plan of Mr. J. Perry, of Dudley-road, Tipton.—*Birmingham Gazette.*

The Student's Column.

NOTES ON PORTLAND CEMENT:

CHAPTER IV. (*continued*).

TENSION TESTS.—In tension tests the shape of the briquette is very important, as also the form of clip in the testing machine. In the plate, Fig. 1 shows the shape first suggested by Grant; Figs. 2, 3, and 4 are some of the shapes experimented with; Fig. 5 is the one finally adopted and generally used at the present day in this country; Figs. 6, 7, 8, 9, and 10 are the forms suggested by the American Society of Civil Engineers; Fig. 11 is a form adopted by Germany and France. In this one an attempt is made to have the briquette break exactly in the centre by means of the cunettes at this point, but experience shows that this is of little advantage, central breaks being dependent on other causes, the chief of which being the uniform bearing of the clips of the testing machine and the uniform moulding of the briquette. The distance of grip between the two clips effects the strain registered; the closer the grip the higher the strain.



In moulding briquettes, with quick-setting cement, and when the minimum of water is used for mixing, one briquette should be made at a time. Having worked the mortar to the proper consistency, it is put, a little at a time, into the mould, pressing or ramming it close after each addition till the mould is filled, then facing off with a trowel or spatula. The briquette should be dense and contain no perceptible air spaces. Generally speaking, briquette moulds are made in halves held together by a clip, spring, or screw. An early arrangement was for the mould to be in one piece, and the briquette, when partially set, was pressed out. This frequently resulted in the briquettes being damaged. Moulds held together by a spring are liable to open when the cement is being pressed into them; thus, the shape of the briquette is uneven, and consequently an uneven strain is exerted when placed in the breaking machine. The most convenient moulds are those held together by thumb-screws or a nest of moulds fixed in a frame by a suitable arrangement, such as that designed by Faija. In England the general practice is to use a dry, stiff paste, pressing into the moulds with the fingers, point of a trowel, or wooden rammer. In Germany the ramming is usually done by a machine, Bœhme's hammer apparatus being greatly in use and recommended by the Cement Makers' Association, a uniform number of beats being given to each briquette. In America the paste, which is usually thin and kneaded with the hands, is placed in the moulds, and the air worked out with the finger tips, a number of briquettes being moulded at a time.

It is a well-known fact that a large excess of water used for moulding briquettes considerably affects the results obtained. This was shown as long ago as 1877 by Mann, the results of whose tests are shown in Table I.

TABLE I.

—	5 oz. water to 32 oz. cement.	6 oz. water to 32 oz. cement.	7 oz. water to 32 oz. cement.	8 oz. water to 32 oz. cement.	9 oz. water to 32 oz. cement.	10 oz. water to 32 oz. cement.
....	433	460	—	306	—	—
....	416	435	—	296	—	—
....	416	480	—	282	—	—
....	344	398	382	363	223	184
....	368	366	387	357	219	221
....	329	416	353	339	211	197
....	487	489	323	316	187	163
....	474	447	420	302	234	165
....	440	471	336	268	209	162
Averages	412	440	367	314	214	182

"With 5 oz. of water to 32 oz. of cement the gauged cement was extremely dry, crumbling under the trowel, and could not be made to take a smooth surface; with the proportion of 6 oz. to 32 oz. it was moderately dry, and could be finished and smoothed off with the trowel; with 7 oz. to 32 oz. the mass was moderately wet; with 8 oz. to 32 oz. the samples were wet and soft; with 9 oz. to 32 oz. they had the consistency of stiff grout; and with 10 oz. to 32 oz. a liquid was produced which could be poured from one vessel to another. In the last two cases the samples shrank considerably, and must have lost some of the water by evaporation."

For twenty-four hours from the time of moulding the briquettes should be kept damp, then carefully taken from the moulds and placed in water, where they remain till due for breaking, being kept entirely immersed, the water maintained at a temperature of about 60° F., and frequently renewed. The state of the water in which the briquettes are stored materially affects the results obtained. If the water is allowed to become dirty or saturated, with the soluble salts of the cement a higher strain is obtained from the briquettes than when the water is frequently changed. The author carried out some experiments on this subject, the results of which are shown in Tables II. and III.

Briquettes were made of the samples of cement, half being stored in water which had become dirty and half were kept in water which was changed every three or four days. A pat was made of one of the samples and divided into three parts. After setting, one piece was kept dry in a bottle, another placed in dirty water, and the other in water which was changed daily. After eight days they were washed with distilled water, dried at 100° C., and analysed, the results of which are shown in Table III.

TABLE II.

—	7 days in water.		28 days in water.	
	Fresh.	Dirty.	Fresh.	Dirty.
Sample A ..	463	490	—	—
" B ..	380	450	—	—
" C ..	525	600	—	—
" D ..	425	490	—	—
" E ..	475	515	—	—
" F ..	516	586	606	636
" G ..	580	673	590	680
" H ..	483	500	540	673
" I ..	516	563	515	605
" K ..	463	563	660	710

TABLE III.

—	Dry.	Fresh.	Dirty.
Volatile Matter	6·47	7·20	7·24
Silica	24·60	25·17	24·97
Alumina	9·34	9·25	8·88
Iron	3·55	3·60	3·63
Lime	52·16	52·18	51·70
Magnesia	2·42	·94	2·74
Sulphuric Anhydride	1·11	1·08	·73

It was expected that a reduction of lime would be shown in the fresh-water pat and not in the other, but the most marked difference is in the magnesia and sulphuric anhydride. The fresh water would contain carbonic acid gas in solution, which would combine with the lime and deposit in the pores of the cake. In a previous chapter it was pointed out that sulphate of lime and aluminates of lime form a compound (Al_2O_3, 3 CaO, 3 $CaSO_4$, 3 O H_2O). This compound is soluble in lime water, but insoluble in carbonates. As no free carbonic acid would be in the dirty water, in all probability the action has been the solution of this compound by the lime set free from the cement. This would account for the reduction in the alumina, lime, and sulphuric anhydride. It was the intention to carry this investigation further, had time and opportunity permitted, treating several samples, and making analyses of the waters as well as the cakes of cement.

Whatever the action, the fact remains that briquettes stored in dirty water give the higher strains, and this should be borne in mind when comparing results.

Great care should be taken in handling briquettes from the time of moulding till they are broken in the machine, especially in the early stages of their hardening. A slight jar when in the "green" state will cause disarrangement of the crystalline compounds, and consequent weakening of the cast. The moulds should be thoroughly clean and slightly oiled to prevent the briquettes sticking. The briquettes should be broken as soon as they are taken from the water. Great care is necessary to have an even grip of the briquette in the machine as cross-strains produced by improper centring tends to lower the breaking strain. The load should not be applied too suddenly, as vibrations so produced tend to snap the briquette. Neat cement briquettes, particularly if very old, are often splintered by the sudden application of the breaking load. The clips of the breaking machine should be clean and the briquettes free from particles of grit or sand, which prevents a good bearing. A stiff piece of paper between the briquette and clip where they bear prevents slipping.

The most accurate breaking machine is the long single-lever steel-yard machine, in which the strain is applied by running a weight along the steel-yard. In using this machine great care is necessary that the weight is run smoothly along the steel-yard without swaying or vibration, and at a uniform rate of speed.

Michaelis's machine, which is a compact though more complicated one, consists of a double set of levers, working on knife edges, the strain being applied by allowing shot to gradually run into a receptacle hanging on the end of the top lever. The shot reservoir is provided with an automatic cut-off, which stops the flow of shot immediately the briquette breaks.

Fairbank's machine is an American one of a similar type, with a number of improvements introduced.

An early machine is the bent lever one patented in 1870 by Michele. Two heavy weights are attached to the longer arm, the shorter arm being connected to a worm and quadrant by means of the briquette clips. Fourteen years later Michele improved this machine, making it automatic, by dispensing with the worm handle and substituting another lever and pair of weights. To this lever is attached a pinion and rack, which latter is connected to the piston of an oil cataract. By means of a valve, the flow of oil is controlled, and the speed at which the strain is applied can thus be regulated.

A handy, compact machine is that invented by Faija. It consists of a lever, on one end of which is attached a spring balance, and the other end the briquette clips. By exerting a pull on the balance, by means of a worm and quadrant, the strain is transmitted to the briquette.

There are a number of other machines, nearly all embodying one or other of the principles of the machines just described. Some of them break briquettes of 2½-in. section at the breaking part. There are certainly no claims to any value in this size of briquette, and one of its disadvantages is that a large briquette is not so easily made as a small one. The use of the 2½-in. section briquette is gradually passing out, and the machines are being fitted to take briquettes of 1-in. section.

TRADE CATALOGUES.

We have received from the General Electric Company, of Queen Victoria-street, their Progress Sheet for July. They have also sent us a catalogue of their desk, bracket, and ceiling fans. In the progress sheet a novel and compact switch and cut-out board is shown, which is well adapted for its purpose. The prices of the various sizes of the "Union" system of screwed brazed conduit are also given. A much better finish can be given to brazed conduits than to welded conduits, since less heating is required for brazing than for welding. Standard gas threads are used, so an ordinary plumber ought to have no difficulty in fixing this conduit. The protected wall plug shown is ingeniously designed, and is worthy of special mention. In the fan catalogue a great variety are shown, which can be driven either by direct or alternating current motors.

OBITUARY.

Mr. J. S. Stewart.—We regret to record the death, on the 3rd inst., of Mr. J. S. Stewart, of the firm of Messrs. Lanchester, Stewart, and Rickards. Deceased had a distinguished career as a student, receiving both the gold and silver medals of the Royal Academy, and, amongst other distinctions, was placed second in the Soane competition of the Institute of Architects. He was associated with Messrs. Lanchester and Rickards in winning the competition for the new town hall and law courts at Cardiff, and other works, such as the new Deptford town hall, the new art school at Hull, and Godalming town hall, and in the preparation of many other designs submitted in public competition by the firm. Before joining the firm he had, in collaboration with Mr. W. Grace, won the competition for a new Kursaal at Weston-super-Mare, which has since been completed from their designs. Two years ago he developed an aneurism of the heart, which recently forced him to retire from participation in the business of the firm, unfortunately before the chief works in which he was associated were completed. His age was thirty-eight years. He left a widow, but no family.

GENERAL BUILDING NEWS.

Latimer Memorial Church, Birmingham.—The Bishop Latimer Memorial Church, Handsworth New-road, Birmingham, was consecrated by the Bishop of Worcester recently. The new building, which has been erected on a piece of land measuring 10,500 sq. yds., near Soho Station, takes the place of a mission-room. The church has been designed by Mr. W. H. Bidlake, of Birmingham, and the contract has been carried out by Messrs. William Sapcote and Sons, of Birmingham. The design is in the late decorated style, and is carried out mainly in Staffordshire brick, with Greenshill stone dressings. The interior is lined with buff brick, and the roof of the nave is supported by a stone arcade. A feature externally is the square tower, 100 ft. high. The belfry will eventually contain eight bells. The nave is lofty, with an open-timbered roof. The chancel is almost as high, and has a groined stone roof. There are a morning chapel, vestries, and a baptistry, containing a marble tank for total immersion, as well as a font. The church is 149 ft. long and 58½ ft. wide within the walls, and has seating accommodation for 1,000 persons.

Church Extension, Sheffield.—The foundation-stone was laid recently of the extended nave of St. Cuthbert's Church, Sheffield. At present the church accommodates about 300 people, and the completion of the nave will give accommodation to 400 more. Local stone and Derbyshire sandstone form the material for the outside of the building; the interior stone-work consists of Bath stone. The architects are Messrs. J. D. Webster and J. Douglas Webster, of Sheffield; and Messrs. George Longden and Son, of Sheffield, are the contractors.

Waltham Abbey Church.—A fund has been opened for carrying out a restoration, under the directions and superintendence of Mr. J. A. Reeve, of the parapet of the tower, by reinstating the battlements and the angle-turrets in accordance, as far as modern conditions will permit, with the original design of the middle of the XVIth century. The proposals extend to the replacement of the present one-light window with a two-light window in each face of the bell-chamber.

Re-opening of Durnford Church, Wiltshire.—The ancient parish church of Durnford has lately been restored, under the supervision of Mr. C. E. Ponting, the Diocesan surveyor. During the progress of the work some very interesting discoveries were made, not the least of these being several frescoes over the chancel arch, while a figure of St. Christopher was found on the south wall. Another interesting discovery was part of a window against a Norman buttress which proves the antiquity of the church. The pulpit, reading desk, lectern, and altar rails, all date back to the early part of the XVIIth century. The old gallery, which was found to be very dilapidated, has been removed, and a smaller one raised in its stead. The panelling of the latter is of very fine oak, and the whole is supported by two Corinthian pillars. The altar has been redecorated. The pews have been repaired. Although a considerable sum was expended in the restoration of the interior, a large part of the money has gone in underpinning. The exterior has also been thoroughly overhauled, and the roof and walls have been renovated. The north and south porches, which date back to the XVth century, have also had their woodwork repaired. The greater part of the ivy—the trunk of which is as large as a man's body, and which has embedded itself 10 in. into the tower, and consequently displaced several large stones and buttresses—has been removed. The dilapidated belfry has been restored.—*Wiltshire County Mirror.*

Congregational Church, Epsom.—The foundation-stones of the new Congregational church at Epsom were laid recently. Accommodation will be provided for 500 persons, and the cost will be about 4,000*l.* Messrs. Gregg and Stakley, of London, whose plans were accepted in a limited competition, are the architects for the work.

St. Nicholas Chapel, Carisbrooke Castle.—Mr. Percy Stone, F.S.A., is engaged upon the restoration of St. Nicholas Chapel as a national memorial to King Charles I. The chief exterior features of the new works comprise the building of a porch at the west end of the north wall, and of a restoration of the early XIIIth century doorway. The seating, for fifty persons, and the dado of the inner walls is made of oak from the hull of H.M. ship *Nettle*. The roof will be panelled with oak decoratively painted, the floor of the body of the church is to be of terrazzo mosaic, and that of the sacrarium will be inlaid in marble. The King has presented the organ from the Chapel Royal, Savoy, with the carved oak table and altar furniture from the late Queen's private chapel in Osborne House. It is intended, should the funds permit, to insert in the west wall a bronze medallion portrait of Charles I., modelled after the profiles by Van Dyck, and to decorate the panels of the east window with the armorial bearings of lords and governors of the Isle of Wight. The chapel was rebuilt in 1738 on the site of an ancient structure which stood there at the time of the Conqueror's survey, and was an appurtenance of Quarr Abbey, in Binstead parish.

Schools, Fulneck, Yorkshire.—A new school has been erected at Fulneck. The new buildings have been provided at a cost of about 4,000*l.* The building, formerly known as the Sisters' House, has been taken over for school purposes, and a new modern wing erected, containing classrooms, a lecture hall, measuring 53 ft. by 25 ft., and rooms for residential purposes. The lecture hall on the top floor is so arranged as to be available for use as a gymnasium for the young ladies. In addition to three large classrooms, six smaller rooms are obtained in the east wing, and there are a dormitory and smaller bedrooms provided in the old block, where also are located the kitchen and the governess's apartments. The corridors and classrooms are heated by hot-water pipes and radiators, and attached to the bedrooms is a range of lavatories and hot and cold water baths, etc. There are also a wash-house and laundry. A hockey and tennis ground is in course of preparation. The contracts have been carried out as follows:—Masonry, Mr. Wm. Hutton, Fulneck; joinery, Mr. W. Procter, Pudsey; plumbing, Messrs. J. Scarth, Pudsey; plastering, Messrs. A. and L. Wheater, Calverley; slating, Messrs. Hill and Nelson, Bradford; and painting, Messrs. Armitage and Driver, Pudsey. The work has been in progress eighteen months, and has been carried out from the drawings and under the superintendence of Mr. C. S. Nelson, architect, Fulneck and Leeds.

Wesleyan School, Chadderton, Oldham.—The foundation-stones were recently laid of a new Wesleyan school at Chadderton. The principal contractor is Mr. Emanuel Whittaker, and the sub-contractors are Mr. Whitworth Whittaker, bricklayer and excavator; Messrs. S. and J. Whitehead, masons; Messrs. Enoch, Shaw, and Son, plumbers; Mr. Kelly, plasterer; and Mr. Pogson, slater. Mr. Thomas Hilton, architect, Oldham, prepared the plans for the work.

New School, Alnwick.—The new Duke's School, at Alnwick, was opened on the 27th ult. The style of the structure is Tudor. The west wing of the quadrangle is formed by the sub-warden's house, and hostel for ten resident masters; while on the east side is the main building, providing for English and classical instruction on the ground floor. A library, reading-room, and office are also provided, the classrooms for the lower senior boys being on the left. The upper senior classrooms, also the large examination hall, are on the right. The hall is about 50 ft. by 27 ft. There is a gallery over the corridor, and it is so arranged that two other classrooms open into it by a folding partition, giving accommodation, in the total, for about 800 persons. The first floor also contains special classrooms, and rooms for science and art subjects, including art classrooms, physical laboratory, lecture theatre, masters' preparation and chemical laboratory. The architect for the work was Mr. J. Wightman Douglas, of Newcastle, and the cost, inclusive of site, was 15,000*l.*

Infectious Hospital, Rotherham.—The foundation-stone of the new infectious hospital for the County Borough of Rotherham was laid on the 28th ult. The site is on the north-west side of Badsley Moor-lane, a little over a mile from the parish church. The area of site available for hospital purposes is 8¼ acres, and the portion at present to be inclosed about 5¾ acres. The hospital buildings are arranged on the pavilion plan, and have frontages to the south-east. There are five ward blocks, each with equal accommodation for males and females—viz., acute scarlet fever, eighteen beds; mild scarlet fever, sixteen beds; typhoid, fourteen beds; diphtheria, fourteen beds; observation block, four beds: total, sixty-six beds. Included in this accommodation are six private wards, one bed each. Attached to each block are the nurses' room, bathroom, stores and linen places, water-closets, and slop sinks. The floors will be of pitch-pine, polished. All internal angles to floors, walls, and ceilings will be curved. Verandahs will be placed at the front of each ward. The administrative block will be placed at the front, to Badsley Moor-lane, and provide accommodation on the ground floor for the medical officer, matron's rooms, nurses' sitting and dining rooms, corridors, lavatories, etc., cooking kitchen, scullery, larder, stores, etc., with side entrance for nurses and serving the wards, etc. On the first floor fifteen bedrooms will be provided for matron and nurses, each fitted with lavatories; bathroom, etc., and box-rooms are provided on this floor. The different rooms in this block will be heated by open fireplaces, the corridors, staircases, etc., by hot water apparatus. The laundry block comprises washhouse, mangling-room, sorting-room, etc. Adjoining the laundry is the disinfector house, engine and van houses, boiler-house, with duplicate Cornish boilers. Stable and ambulance house is also provided on the west side of the laundry. A discharge block and mortuary are also arranged on the east side. The lodge is to be erected near the entrance to the hospital. The different blocks will be built with local bricks and Matlock stone dressings, relieved with white Lincolnshire brick bands, and moulded string courses. It is proposed to adopt the electric light to all the blocks. The contract for the building (minus the mild scarlet fever block) has been let to William Thornton and Sons, of Rotherham, for the sum of 11,994*l.*, the work to be completed in fourteen months. The total cost of the whole scheme, including mild scarlet fever block, steam laundry fittings, electric light installation, and laying out of the grounds, will be about 20,000*l.* Mr. J. Platts is the architect.

Dispensary, Liverpool.—The foundation-stone of new buildings for the Liverpool Medical Missionary Society, to be erected on the site of the old dispensary, in Burlington-street, was laid on the 25th ult. The new premises, designed by Messrs. R. Owen and Son, are to consist of a waiting-hall to hold 350 persons, and named the "Hakes Memorial Hall," in honour of the late Dr. James Hakes, and, adjacent, an administration department, three stories in height. The hall, entered from Bevington-hill, is to be 45 ft. by 40 ft. Adjoining is a nurses' room, with surgeries on each side, a dispensary, and in the basement a smaller waiting-room for 150 persons. A doctors' room, with entrance from Burlington-street, a keeper's dwelling, and other apartments are provided. On the outside, the building will be of red brick, with terra-cotta dressings.

Market Extension, Bradford.—The extension to the market, in Rawson-square, Bradford, is now nearing completion. When finished, the building will consist of a market-hall in the centre, surrounding which there will be ten shops, with frontages to Rawson-square, Northgate, and James-street, and a hotel. The exterior is built of stone, and is in the Italian Renaissance style. At either end of the Northgate elevation there is a domed tower, 84 ft. in height from the street level to the top of the finials, and a third dome, in

shape hexagonal, and 60 ft. high, rises above the main entrance. The area of the market-hall, which will be covered with a single-span roof of glass and iron, is 6,684 sq. ft., and the floor area of the shops and the hotel is 51,400 sq. ft. The basement under the market-hall will be used for cold storage purposes. Entrances are provided on each of the three frontages, and there is a waggon entrance from James-street, and also a covered way communicating with the present meat and fish market. The tenders accepted amount to 24,537*l.*, and certain additional work, not provided for in the original contracts, has cost 1,132*l.*, making the total cost of the land and building 50,669*l.* The following are the contractors:—Masons' work, Messrs. Thomas Obank and Sons, Idle; Joiners' work, Messrs. E. Fearnley and Sons, Bradford; ironfounders' work, Messrs. Taylor and Parsons, Bradford; plumbers' work, Mr. Albert Ross, Shipley; painters' work, Mr. Arthur Wear, Bradford; plasterers' work, Messrs. Crabtree and Berry, Bradford; slaters' work, Messrs. W. H. and E. Walton, Bingley; roof glazing, Messrs. Helliwell and Co., Brighouse. Messrs. T. C. Hope and Son, whose plans were selected in competition, are the architects of the work.

REBUILDING IN HOLBORN.—The enlargement of the premises of A. W. Gamage, Ltd., outfitters, on the north side of the street, will be carried out after the plans and designs of Mr. Joseph Sawyer, the architect of that company's premises in Holborn and Leather-lane. The new buildings, to be constructed of Portland stone, and to harmonise with those recently erected, will cover a total area of 11,050 ft. super., and will have a frontage of 95 ft. to Holborn. They will occupy the site of Nos. 118-122, Holborn, the old Black Bull coaching-house and tavern, and Bull Inn-chambers at the rear, which were built in the former yard of the inn. The ground has been leased by the freeholders, the Prudential Assurance Company, for a term of ninety-nine years, by an indenture of April 28 last, at a ground rent of 3,220*l.* per annum, the lessees covenanting to erect an improved block of buildings at a cost of not less than 50,000*l.* The basement and upper portion of the block is to be planned for purposes of a restaurant and show-rooms and offices respectively for other tenants; the ground floor will be appropriated to the company's shops and sale-rooms.

NEW BUILDINGS, KENSINGTON.—A block of land in High-street, Kensington, on the north side, with frontages to three streets, and an area of about half an acre, has been built upon by Messrs. John Barker and Co., according to the designs of the architect, Mr. Philip E. Pilditch. The buildings are in Portland stone and red brick, and consist of Messrs. Barker's business block on the ground and first floors, and five floors of flats over, approached by one central staircase, and with three subsidiary ones.

INSTITUTE BUILDING, HOYLAKE, LIVERPOOL.—The foundation-stone of the Hoylake Institute, at which the Hoylake Gospel Temperance Society are to take up their headquarters, was laid a short time ago. The buildings will extend over an area of about 2,300 sq. yds., at the junction of the Birkenhead and Hoylake roads, and will comprise an assembly hall to accommodate an audience of 350 persons, a crush-room, and suite of apartments to be used as a club. Externally the building will be faced with Ruabon wire-cut bricks, with Grinshill stone dressings. The architect is Mr. W. M. Law, of Liverpool.

AYR NEW GAIETY THEATRE.—The New Gaiety Theatre, Ayr, which was partially burned on August 4, 1903, has been reconstructed in accordance with plans prepared by Mr. Alex. Cullen, architect, Hamilton. The building has been heightened 11 ft., and eight boxes now take the place of the original four. An amphitheatre has been introduced, the entrances and exits have been improved, so that there are two exits from each section of the house. The entire auditorium has been remodelled, and the galleries taken down and re-erected with steel and concrete. The roof also has been renewed, and is entirely of steel beams and concrete. The stage has also been improved.

BRISTOL CHANNEL YACHT CLUB.—The Earl of Jersey opened recently the new club premises of the Bristol Channel Yacht Club at Mumbles. In May last the committee instructed their architect, Mr. Glendinning Moxham, Swansea, to prepare the necessary design for the work, and shortly after the contract was let to Messrs. Bennett Brothers.

FIRE STATION, BALLYMACARRETT, BELFAST.—The new branch fire station, erected in Ballymacarrett, by the Council of the County Borough of Belfast was opened on the 29th ult. The new station is Georgian in style. The outer elevations are in red brick, relieved with white Scotch sandstone dressings. The interior walls throughout are of bricks, plastered with cement dado. The engine-house and stables are in enamelled bricks, the engine-house, duty-room, and recreation-room having varnished pitch-pine ceilings. The roofs are covered with Welsh Countess slates. The engine-house will accommodate three machines, and is placed towards the principal front. It is 35 ft. long, 38 ft. wide, and 6 ft. high, and immediately behind the engine-house are the stables. Accommodation is provided in the stable to stand four horses immediately behind the engines, with loose-boxes for two horses at the back of the stable. Alongside the engine-room is placed the duty-room and recreation-room. At the back of the building is a yard, 62 ft. long and 34 ft. wide, with entrances at each end. A range of buildings is placed round two sides of the yard, consisting of lavatory, fodder store, washing-shed, and coal stores. A laundry and store are provided on the ground floor next the dwelling-houses. The dwellings for the staff are at the front and side of the site, those at the principal front being over the engine-house, watch-room, and recreation-room, and those at the side being on the ground floor and first floors, one house over the other. All are self-contained, and the entrances to all are from the yard and the balcony. The lighting throughout is by electricity. The engine-house and stables are paved throughout with adamantine clinkers, and the yard with square setts. The contractors for the building were as follow:—Mr. William Dowling, builder; Mr. John Dowling, plumber and electrician; Mr. Stanley Johnston, electric bells; Messrs. Musgrave and Co., Ltd., stable fittings; Mr. Thomas Try, automatic door fittings; Messrs. Young and Mackenzie, architects.

WALDORF THEATRE, ALDWYCH.—It is expected that the new theatre will be ready for occupation in the course of the spring of next year. The building is being erected after Mr. W. G. R. Sprague's plans and designs, and a lease of the property has been taken by, it is said, Messrs. Schubert Brothers, for performances by American companies of musical comedies.

A NEW OPERA HOUSE, LONDON.—A project has been opened for the erection of an opera house in Aldwych, on the land between the churches of St. Mary-le-Strand and St. Clement Danes. It is stated that the Duke of Bedford intends to demolish the opera house in Covent Garden shortly, in order to carry out a contemplated extension and improvement of Covent Garden market, on the north-east of the Piazza.

OPEN-AIR SEA-WATER BATHS, CARNARVON.—The Carnarvon Corporation have accepted the tender of Messrs. Geo. Roberts and Brothers, contractors, Ruabon Works, Llandudno, for the construction of a concrete open-air sea-water bath on the foreshore of the Menai Straits, from plans prepared by Mr. Edward Hall, the Borough Engineer, and approved by the Local Government Board who have already sanctioned the borrowing of 2,500*l.* for its erection, the loan to be repaid in twenty years. The bath will be of elliptic form, and provided inshore with a caretaker's office and twenty dressing-boxes, all arranged with flat roofs for the accommodation of spectators. The impounded water will measure 250 ft. in length, 85 ft. in breadth, and range from about 3 ft. to 9 ft. in depth at highest states of tides.

OFFICES, COCKSPUR-STREET, LONDON.—The new offices, to be occupied by the Amalgamated Shipping Companies—namely, the White Star Line, American Line, etc., in Cockspur-street, will occupy the site of the building formerly Messrs. Hampton's offices. The architect is Mr. Henry Tanner, Junr., and the builders, Messrs. Waring-White Building Company, Ltd. The concrete floor and roof construction has been let to the Columbian Fireproofing Company, Ltd., King William-street, E.C.

HOTEL, PICCADILLY.—The new Great Ritz Hotel, Piccadilly, is being erected on the site of the old Walsingham Hotel. The architects are Messrs. Merves and Davis, Dean-street, Soho, and the builders, Messrs. Waring-White Building Company, Ltd. The contract for the concrete floor and roof has been let to the Columbian Fireproofing Company, Ltd. King William-street, E.C.

STAINED GLASS AND DECORATION.

ST. WINSTAN'S CHURCH, REPTON.—A stained-glass window, consisting of three lights and tracery, has just been unveiled in this church. The subject chosen is "Christ Blessing Little Children," which is contained in the whole three lights, while in the tracery openings above there are angels holding scrolls with texts beneath. Practically all the stonework is new, but the architect, Mr. Naylor, of Derby, has retained some of the old, and has introduced it in the tracery. The work was carried out by Messrs. Percy Bacon and Brothers, of Newman-street, London, W.

SANITARY AND ENGINEERING NEWS.

NEW BRIDGE, ILFORD.—The new bridge over the Roding at Ilford was opened a short time ago. The bridge is 60 ft. wide, and there is a clear span of 40 ft. On each side are abutments of red brick, with Aberdeen granite quoin stones, ornamented with plinths, and with moulded caps. The bridge is constructed with steel girders and troughing, with cast-iron facia and an ornamental parapet above in open ironwork, bearing an iron device with the county arms displayed. There is wood-block paving on the bridge and the paths are of non-slip Yorkshire paving, with granite kerb. Iron railings have been put up from each side of the bridge to where the paths join the houses and shops. The work has been carried out by Messrs. A. Fasey and Sons, contractors, of Leytonstone, at a cost of 12,619*l.* Mr. Neave was the engineer in charge of the work.

RESERVOIR, GIRVAN, N.B.—The new reservoir at Girvan was opened on the 21st ult. The works, which cover close on 5 acres of ground, have a storage capacity of 15,000,000 gallons of water. The cost of the reservoir will be 12,000*l.* Mr. Jno. Eaglesham, C.E., Ayr, was the engineer; and the contractors, Messrs. Osborne, Ayr.

WATERWORKS FOR BRADFORD, NIDD VALLEY.—The new Bradford waterworks, situated in the Nidd Valley, were opened recently. The works were commenced in September, 1893, by the construction of the masonry dam at Gouthwaite, and which forms a lake nearly 2½ miles long. In the following year Haden Carr reservoir and the main conduit to Chellow Heights, 38 miles in length, with the branch mains, were in operation. With the exception of the bridges carrying the aqueduct over the valleys, the intake dams on the streams which deliver the water into the conduit on the way to Bradford, and the valve, measuring and screening chambers, the works are underground. There are four tunnels on the line of the works, over 6 miles in length:—Rain Stang, 1½ miles long, 484 ft. deep; Burn and Ashfoldside Beck, 1¾ miles in length; Greenhow Hill, which divides the valleys of the Nidd and the Wharfe, 3½ miles long, 450 ft. deep. There are 12 miles of main aqueduct in cut and cover, 6 ft. 3 in. by 5 ft. 9 in. inside; 15 miles of steel and cast-iron pipes, 3 ft. diameter; and 6 miles of branch pipe feeders. The drainage area is 18,000 acres of clean moorland, which rises from 900 ft. to 2,000 ft. at Great Whernside. Mr. James Watson, M.Inst.C.E., was the engineer for the work, Mr. Barlow being the resident engineer. The total cost of the scheme will be about 2,000,000*l.* sterling.

MANCHESTER SHIP CANAL.—The following is the recently issued report of Mr. Hunter, the Chief Engineer to the Manchester Ship Canal Company, as to works:—"The depth of water in the Ship Canal and docks has been fully maintained throughout the entire length of the waterway by means of the dredging operations. The leading jetty at the inner end of Eastham locks has been completed and is in use. The spare steel gates for the upper end of the 80-ft. lock at Eastham have been completed and delivered. A timber wharf is being constructed on the southerly side of the canal at Runcorn, adjacent to the new transporter bridge between Widnes and Runcorn. The new berth and the railway sidings in connexion therewith on the northerly side of the canal at Weaste for the accommodation of the coal traffic has been completed, and the coaling crane is now in course of erection thereat. Considerable extensions of the railway system at and about the docks at Manchester are in course of formation. The embankments and slopes of the canal are generally in good condition, and the works throughout have been efficiently maintained. The works in connexion with the new dock on the site of the old racecourse, and with the transit sheds on the southerly side thereof, which are being carried out by Mr. Henry Lovatt and others, under contract with the Manchester Dock and Warehouse Extension Company, Ltd., have made good progress during the half-year."

NEW BRIDGE, EXETER.—The foundation-stone of the new bridge which is being built over the river at Exeter was laid recently. The bridge will consist primarily of eight pairs of steel girders, each pair meeting in mid-stream. The road is to be of jarrah wood blocks, in which will be laid electric tram lines. Under the slightly raised paths will be gas and water mains. The facing and corners are of granite, chiefly from Blackingstone Quarries on Dartmoor. The cost will be over 25,000*l.* The design and construction of the works have been under the supervision of Mr. Cuthbert A. Brereton, engineer, Mr. Woodman being the contractor, and Mr. A. T. Easton sub-contractor for the stonework. The resident engineer is F. G. A. Pinckney, and the clerk of the work, Mr. G. Mason.

FOREIGN.

SWITZERLAND.—The hospital at Basel is to be enlarged according to the plans of the architects, La Roche, Stähelin and Cie.; besides the enlargements, the older portion of the building is to be supplied with heating apparatus, electric lighting, and other modern conveniences.——The architect, Emil Probst, died at Berne on July 23, in his seventy-sixth year.

AUSTRIA.—New elementary schools are to be built in Vienna for boys and girls respectively; each building is to contain sixteen classrooms, a conference room, a gymnasium, etc., and they are to be completed by the summer of 1905.——A new children's hospital is to be built in Vienna; the building will owe its existence to the grants of Herr Bernard Pollak.

PUBLIC WORKS IN PANAMA.—In accordance with a law dated May 20 last, the National Convention of Panama has voted a sum of $3,250,000, or approximately 325,000*l*., out of the money received for the Canal concession, for the purpose of carrying out improvements throughout the Republic. Of this sum about 100,000*l*. is assigned to improvements in the province of Panama, the remainder to be divided in varying proportions amongst other provinces, the expenditure to be spread over a period ending September 30, 1906. The improvements contemplated in Panama itself consist of a capitol, or Government palace, a public prison, a theatre, public lavatories, a municipal palace, a library and museum, a university, and a palace of justice; likewise repairs and enlargements of the existing Government palace, schools, repairs to various important thoroughfares, a number of police stations, and sundry smaller matters, such as the extension of the electric light system, etc. The improvements in the provinces will comprise a wholesale construction of roads, involving some sixty or seventy bridges, many of them of iron (presumably, for the most part, of small dimensions), and numerous schools, electric light installations, hospitals, municipal buildings, police stations, etc. A number of architects and engineers are to be despatched to the various provinces within a period of two months from the date of the promulgation of this law, and are to prepare plans and estimates for these undertakings, to be presented to the Government Department of Public Works not later than December 31 next, after which bids for the execution of the work are to be solicited.

MISCELLANEOUS.

A REVIVAL OF PNEUMATIC DESPATCH IN LONDON.—A measure will be promoted in the course of next Session for powers to adopt the American system of the Batcheller Pneumatic Tube Company, within the limits of the four miles radius from Charing Cross. Sir John Wolfe Barry is appointed engineer to the undertaking. The first tube, laid between Euston terminus and the Northern District Post Office, had a cross-section of about 1 ft. 4 in., and proved so efficient that the Pneumatic Despatch Company essayed a similar project in 1859-60, when Mr. Latimer Clarke and Mr. T. W. Rammell, as joint engineers, laid a tunnel, constructed by Mr. John Aird, of cast-iron ⊃-shaped sections, 1 in. thick, and measuring 4 ft. by 4 ft. 6 in., beneath Newgate-street, Holborn, New Oxford-street, Tottenham Court-road, Hampstead-road, and Drummond-street, for carrying mails and parcels to Euston terminus from the General Post Office. The line extended through a distance of 2¼ miles; the engine-house was situated between High Holborn and Whetstone Park, at the rear of the Soane Museum. But by reason of the leakage of air and other mechanical defects in the tunnel, the engine, albeit worked up to 800 horse-power, proved to be unequal to the task of maintaining the enormous vacuum required for the desired speed of the train of cars. Five years ago Mr. George Threlfall, consulting engineer, propounded a scheme for using that tunnel for an electrical train, controlled from a central station, carrying nine tons in each of its four or five cars, at a rate of about thirty-five miles an hour, and for fitting a smaller pneumatic tube within the roof, through which "late" letters could be blown to Euston station in less than two minutes. He and Mr. George Neill had made an exploration of the tunnel, which they found in good condition, though obstructed with brickwork in places, and full of water underneath Holborn Viaduct. The portion beneath Tottenham Court-road had been used for the conduct of electric light mains; in another portion a brick wall had been built to support a sewer. The present project relates to an initial system of 12-in. tubes, laid in double lines, extending over 95 miles, with 150 stations, at an estimated cost of 3,000,000*l*.

CAMBRIDGE UNIVERSITY.—The Museums and Lecture Rooms Syndicate state in their annual report that the departments of medicine, surgery, pathology, and pharmacology have taken over the new buildings of the Medical Schools which were recently opened by the King, and that the contents of the Woodwardian Museum are now deposited and arranged in the Sedgwick Memorial Museum. The Woodwardian Museum, the Arts Schools, and the ground floor of the block designed by Scott, near the Senate House, are now at the disposal of the Library Syndicate, who have effected some structural alterations of two rooms in Scott's building for the housing of the Acton Library lately presented by Mr. John Morley to the University. The greater part of the books have already been received, to an amount whose weight exceeds 40 tons. Some valuable donations of Oriental MSS. have been made during the past twelve months, amongst the benefactors being Mrs. Lewis, Mrs. Gibson, Syed Ali Bilgrami, University teacher of Marathi, and the Maharajah of Ulwar.

CEMENT NOTES.—There are numerous references to the cement trade in the consular reports recently received at the British Foreign Office, and we subjoin some examples. Mr. Consul Keyser writes from Cadiz:—"The chief work in the cement factory has been the production of bricks for the enlargement of the buildings and the manufacture of some 6,000 tons of cement. It is expected to reach an annual output of 20,000 to 30,000 tons. The realisation of this estimate has been delayed, owing to the non-arrival of certain necessary machinery. A dividend of 4 per cent. has been paid to the shareholders." Mr. Vice-Consul Sterne writes from Novorossisk, in the Batoum district:—"I have been unable to obtain the figures for cement for 1903, but I am informed that the total production was 1,500,000 barrels, or 241,936 tons." Reporting on the trade of Hanover, the Vice-Consul remarks that the cement business has shown scarcely any improvement, although it is more brisk than in 1901. Owing to the unfortunate conditions prevailing in the United States—*e.g.*, building strikes and over-production—there was a serious falling-off in exports, though this was more than counter-balanced by the increased demands of the home trades. The Vice-Consul at Los Angeles, U.S.A., writes:—"The bulk of the cement used here is now of American manufacture. American and foreign cements have driven the British article out of the market." On the other hand, Mr. Allen, reporting from San Diego, says:—"The cement imports amounted to 24,769*l*., showing an increase of 7,341*l*. over 1902; of this 16,713*l*. came from the United Kingdom, and 8,056*l*. from Belgium and Germany." Mr. Consul Laidlaw, describing the commerce of Portland, Oregon, U.S.A., observes that:—"The trade in cement was large during the year 1903, and California-made cement is being shipped to an increasing extent. It is packed in bags and sells at 1s. to 1s. 6d. less than the best foreign, which there is a strong probability it may supplant in the near future. Some quantity was received which, through a mistake in manufacture, would not set, but this has been remedied, and the quality is well spoken of. Japanese cement was received in this market to the extent of 8,541 casks, and is considered fair quality, selling at about the price of imported natural cement. German cement has the best market, and of this there were received here 101,650 casks. Of Belgian cement the receipts were 40,920 casks, and of British 30,280 casks. Best brands of cement sold at an average of 10s. 3d. per cask for artificial, the natural being from 1s. to 1s. 6d. less. A larger trade in fire-bricks was done at an average price of 5*l*. 10s. per 1,000. So far this trade is entirely British." The Vice-Consul at Seattle, Oregon, writes:—"The question of cement imported to this port is one to which the attention of British exporters should be called, for cement is in great demand, and will be for years to come. There are several large buildings contemplated, including a 200,000*l*. Government building, a public library to cost 40,000*l*., and a railway tunnel, now in course of construction, to cost 200,000*l*. In 1903 all the cement imported came from Germany."

FRANKFORT MUNICIPAL BUILDING ENTERPRISE.—The population of Frankfort-on-Main is rapidly increasing. According to an estimate published by the Chamber of Commerce early in 1904, it then amounted, including the suburbs, to 313,600. The rapid increase has at times produced a scarcity of dwellings, more especially small dwellings, and this scarcity has led to the pooling of suburban building sites under the Lex Adickes, which, roughly speaking, provided the municipality with the power of laying out new streets in quarters previously undeveloped owing to the great number of small landed owners there who could not be prevailed upon to sell at a fair price, nor could come to terms among themselves. The municipality has also, since 1888, as a further remedy for the scarcity of small dwellings, built houses to be let to their officials and workmen. The municipality has also furthered the construction of small dwellings by granting prolonged leases of municipal building sites; by granting building loans, in some cases up to nine-tenths of the capital sum required; by taking shares in such building enterprises; by granting mortgages; by guaranteeing the interest due on the capital sums, provided always that the moneys were required for the construction of smaller (artisan) dwellings. In March, 1902, the municipality owned forty-seven dwelling-houses for officials, etc., in the construction of which 1,500,000 marks had been spent. The guarantees given for capital and interest amounted to 5,500,000 marks: shares had been subscribed for to the extent of 500,000 marks. Besides these sums the municipal savings bank has advanced moneys in the nature of mortgages on the same kind of buildings to the extent of 825,000 marks. The municipality-owned houses are said to be a good investment, and need no financial assistance. The rents charged for the flats contained in these houses (as far as they are let to municipal officials, who have a claim upon the flats if they draw a salary the initial amount of which does not exceed 2,500 marks) are as follows:—198 flats with two rooms, 18m. 50pf. to 24m. per month; 44 flats with three rooms, 34m. to 38m. per month; 7 flats with five rooms, 75m. to 87m. per month. Besides these, the town had in March, 1902, the first call upon 20 flats with one room (no kitchen), 9m. per month; 122 flats with two rooms, 26m. 50pf. to 31m. 50pf. per month; 41 flats with three rooms, 40m. 50pf. to 48m. per month; 30 flats with four rooms, 60m. per month. The terms of the leases vary, but the rates are never included. Up to the present the municipal official dwellings have always been well let.

BUILDING TRADE IN GERMANY.—The building trade (writes Mr. Consul-General Oppenheimer) continued lively in 1903, for the average annual increase in the population of 800,000 to 900,000 must be provided for. The trade received a fresh impetus also from the policy of sanitary improvement carried out by many municipal authorities. New thoroughfares are cut through old districts, thus bringing down great numbers of small dwellings, and many old houses are closed by authority, so that numbers of the population are compelled to find habitations in new quarters. Such measures have produced in the population a certain taste for modern requirements, and the rapidity with which new blocks of artisans' dwellings are let, though often at some distance from the factories and workshops, proves that the working classes of the population have been educated in this respect. The supply of extended new quarters has been facilitated by a tendency for speculative building, to be carried on by financially-strong societies formed for that purpose, rather than by individual speculators. The activity in the building trade has, of course, influenced the immediately dependent trades, such as iron, stone, and bricks; the benefit has spread also to the glass and wood industries, and to those embracing interior decoration; but the cement industry, owing to great over-production, has not benefited.

OPEN SPACES.—In response to representations made by the Hampstead Heath Extension Committee, the St. Pancras Borough Council have agreed to contribute 500*l*. towards the fund of 39,000*l*. for the acquisition of the 80 acres belonging to the Eton College trustees on the north-western boundary of the heath; the balance still to be collected amounts to 5,000*l*. ——The Metropolitan Public Gardens Association have, in co-operation with the Billingsgate Christian Mission, opened to the public the ground appertaining to the former St. Botolph's Church, Billingsgate, and have obtained the insertion of an amendment in the Bill for the demolition of the Church of St. Bartholomew-the-Less in West Smithfield, whereby the existing area of open space will not be curtailed by the scheme for rebuilding within the precincts of the hospital.——The Westminster City Council are prepared to maintain the garden of Golden-square, Soho, in the event of its being acquired and laid out by the Association; the Association have undertaken to lay out the churchyard of St. Nicholas, Deptford, subject to a guarantee for its up-keep; to restore the churchyard of St. Mary, Whitechapel, and to take steps for preserving, as an open space and garden, the disused burial ground, nearly ¾ acre in extent, of Wycliffe Chapel, in Philpot-street, Stepney. ——The National Trust have accepted from Mr. W. H. C. Nation the gift of a tract of about 21 acres on the summit of Rockbeare Hill, commanding a view of the Exe valley, near Exeter, which will in future be called "Prickly Pear Blossoms Park," after Mr.

Nation's book of poems; and have acquired about 3 acres on a southern ridge of Crockham Hill, near Westerham, affording a beautiful prospect over the weald of Kent as far as Leith Hill and Haslemere; the purchase was made by Miss Octavia Hill with a sum of money bequeathed to her "in memoriam," for use at her discretion.——A park of about 40 acres has been opened at Romford, whereof one-half was bought by the Council for 3,000*l.* and the other half was given by Mr. H. H. Raphael.——Colley Hill, Reigate, a tract traversed by the ancient road afterwards the "Pilgrims' Way," in its course through Surrey to Canterbury, is now secured to the public by Mr. G. Taylor's gift, in commemoration of Queen Victoria's reign.——An appeal is made for 12,000*l.* to secure 700 acres marching for about one mile with Ullswater Lake, and comprising Gowbarrow Park and ravine, and the cascade by Aira Force; the property is offered for that sum to the National Trust by Mr. Henry Howard, of Greystoke Castle.

ARBROATH ABBEY BUILDINGS.—On the 4th inst., Mr. W. T. Oldrieve, of H.M. Office of Works, had a conference with the Property Committee of Arbroath Town Council at the Abbey in connexion with the proposal that the part of the Abbey buildings in the custody of the Town Council, which includes the Abbot's House and the Regality Tower, be handed over to H.M. Board of Works. It is the desire of the Board of Works to have the buildings transferred to them, so that adequate attention may be given to their preservation. Another aim of the Board of Works is to make the whole of the buildings accessible to visitors. The Regality Tower would be made accessible from the Abbey Pend, and visitors be enabled to get to the top of it. Whatever might be the ultimate intention regarding the Abbot's House, which is inhabited, nothing would be done to disturb present arrangements, except to repair the Abbot's kitchen, so that visitors might more comfortably inspect it. It would be to the advantage of the town to have these places, which are strictly exhibition buildings, made as attractive as possible to visitors, and some parts of the buildings are greatly in need of the attention which the Board of Works would be able to bestow upon them. The matter will now be brought before the Town Council in definite form.—*The Scotsman.*

BUILDING BY-LAWS, LITTLEHAMPTON.—At the last monthly meeting of the Littlehampton Urban District Council, Mr. Etherington moved the adoption of a recommendation by the Works Committee that the Local Government Board be asked to sanction an alteration of the building by-laws to allow the construction of garrets in small houses without an extra thickness of the walls being required. Mr. Pile seconded, and said the alteration was intended to benefit the tenants of small houses, who required all the room they could possibly get during the season. If this was done the buildings would be strengthened by the additional timber used on the roof. As a matter of fact, it was found that in the past this idea had been adopted by builders surreptitiously. Mr. Blanchard said he considered the proposal would encourage jerry building, and also expressed an opinion that someone was very much to blame if their by-laws had been evaded as Mr. Pile stated. Mr. Jones supported Mr. Blanchard in his objection, but the other members of the Council approved, and the alteration of the motion was carried. An elevation of the proposed free library building was submitted by the surveyor, and approved by the Council, the cost being estimated at not exceeding 2,000*l.*—*Sussex Daily News.*

WAR MEMORIAL, CHESTER.—The memorial, which has been placed in the south transept of Chester Cathedral, in memory of the men of the Cheshire Regiment who fell in the Boer War, was unveiled by Earl Roberts on the 1st inst. The memorial consists of a tablet of white English alabaster and white Carrara marble, and has been designed and executed by Mr. Thomas Rudge, of London.

EXPORTS OF WOOD FROM SWEDEN.—Mr. MacGregor, British Consul at Stockholm, sends some interesting notes on the condition of the timber trade there. He remarks that, in 1903, white wood deals did not sell well. This was owing to the fact that white wood from the southern part of Europe has, to a considerable extent, taken the place of that grown in the north. Though inferior to the latter as regards quality and shape, the southern product possesses certain advantages as regards longer average dimensions and cheapness. With respect to red wood, considerable quantities of deals, battens, and planed boards were sold early in the season, and at remunerative prices, to South Africa. When, later on, wood from the White Sea and Canada was offered for sale at lower rates, the Swedish goods did not sell well, though prices at Stockholm, it is stated, gradually sank from 15*s.* to 1*l.* per standard under those previously obtained. In spite of all this, the exporters were unable satisfactorily to dispose of their heavy stocks. British buyers, and especially those in London, adopted a very reserved attitude throughout the year. French importers also were very cautious in placing their orders, but purchased about the average yearly quantity. Swedish exporters are said to have generally succeeded in keeping up prices for sawn wood during the first half of the season; but as regards planed wood the quotations fell considerably. The market for the latter goods improved somewhat in the autumn, when there was a slight rise in prices, especially for wood sent to the Cape. For some years the market for floorings has been in a very depressed state. This is attributed to keen competition and the want of anything like co-operation on the part of the different exporters. Fears are therefore entertained that a once remunerative industry will be ruined. According to the report of the Swedish Sawmill and Wood Exporters' Association, the export of deals, battens, and boards, planed and unplaned, from the whole of Sweden was, in 1903, 1,039,462 standards, an increase of about 35,000 over the previous year. The quantity shipped to the United Kingdom was 440,718 Petersburg standards, which was a decrease of about 8,500 standards as compared with the year 1902. A marked increase took place in the export of wood to Denmark and Spain, and, in a less degree, to France, Germany, Netherlands, and Portugal. As compared with 1902, not half the amount of wood goods was exported to Australia, whereas the export to South Africa and Egypt increased by no less than 30,500 standards. During 1903 a large combination of sawmill companies and firms took place within the district of Lulea. The amalgamated company has in this way obtained control of large forests and of about 70 per cent. of the total shipment of the wood from that district.

Legal.

POINT UNDER THE LONDON BUILDING ACT, 1894.

THE case of Leadbetter and others *v.* the Mayor of St. Marylebone and others came before the Court of Appeal, composed of the Master of the Rolls and Lords Justices Stirling and Mathew, on the 6th inst.

This was an appeal from an order made by Mr. Justice Phillimore, in chambers, granting an interim injunction restraining defendants from increasing the height of a party-wall between Nos. 33 and 34, John-street, Edgware-road, without giving notice to the plaintiffs, as adjoining owners, in accordance with the provisions of the London Building Act of 1894. The motion, by consent of the parties, was treated as the trial of the action. It appeared that, on April 7, 1902, a building agreement was come to between the freeholders of No. 33, John-street, and one, Eccleston, to be followed up by a lease for thirty years. Eccleston wanted to rebuild No. 33, and, for that purpose, it was necessary to deal with the party-wall. Notice was accordingly given to the defendants under the London Building Act. The defendants intended, at some future time, to build workmen's dwellings on the site of No. 34, and they desired that the party-wall should be strengthened, and certain alterations made in it with a view to their ultimately building these dwellings. The parties, being unable to agree, each side appointed a surveyor to act as arbitrator. In the result, these gentlemen made an award in which they directed that the party-wall should be altered in accordance with the wish of the defendants, the additional thicknesses to be on the defendants' land, and carried out at their expense. The award further directed that the defendants should be at liberty at any time to build their proposed premises to such a height as they desired; in case of dispute, either party were to apply to the arbitrators. These directions were carried out, and in September, 1902, Eccleston parted with his lease to Leadbetter. The defendants had pulled down No. 34, and intimated that they intended to build on the top of the party-wall. Plaintiffs thereupon said they were entitled to a party-wall notice. Defendants denied this, and said they were entitled to do as they wished under the award. The plaintiffs replied that, in so far as the award dealt with a future user of the party-wall, it was *ultra vires*. The question, therefore, was whether the award on this point was binding, or whether, as the plaintiffs alleged, they were entitled, as adjoining owners, to a party-wall notice.

Mr. English Harrison, K.C., and Mr. G. A. Scott appeared for the appellants, and Mr. J. Eldon Bankes, K.C., and Mr. Poyser for the respondents.

At the conclusion of the arguments of counsel, the Master of the Rolls, in giving judgment, said that Mr. Justice Phillimore had held that the award, so far as it dealt with a future user of the wall, was *ultra vires*, and, therefore, bad. The plaintiffs who, since the award, had changed from the position of building owners into that of adjoining owners, were clearly entitled to insist on their right to a notice being served under the London Building Act, and to a reference in the event of there being a dispute. He thought the appeal should be dismissed, and judgment entered for the plaintiffs, with costs.

The Lords Justices concurred.

CASES UNDER THE WORKMEN'S COMPENSATION ACT, 1897:

BEECHER *v.* BEALE AND SON.

THE case of Beecher *v.* Beale and Son came before the Court of Appeal, composed of the Master of the Rolls and Lords Justices Stirling and Mathew, on the 9th inst., on the appeal of the plaintiff from a decision of Judge Emden, sitting at the Dartford County Court, under the Workmen's Compensation Act, 1897.

Mr. Senhouse, for the appellant, said that the only point which arose on this appeal was as to construction of the word "about," used in a certain section of the Act. He (counsel) was unable to persuade the learned County Court judge that the case was not governed by previous decisions of the Court of Appeal. If he could not distinguish the present case from those decisions he could not succeed on this appeal. The plaintiff was a foreman of navvies, and had been engaged for a considerable time in building some shops, and his employment was entirely on the buildings which were being erected. At the moment of the accident the plaintiff happened to be, by chance, not on the building, or, in the ordinary acceptation of the term, not in proximity to the building. The plaintiff, at the time the accident happened, had gone down to the railway station, which was 500 yds. away from the building, to see after some cement, and that was to oblige his foreman. With that exception the plaintiff had had no work to take him off the building. It was admitted that the terms of the man's employment was that he should be employed entirely on the building. The learned counsel contended that the accident arose out of the plaintiff's employment, and came within the meaning of the words of the section of the Act "on, in, or about" a building, although the plaintiff happened not to be there at the precise moment of the accident.

At this stage the Master of the Rolls said that for a workman to recover compensation under the section he must be "on, in, or about" a building. In the present case the plaintiff was not physically approximate to the building.

Mr. Senhouse said he could not put the case for the plaintiff higher than he had done.

The Master of the Rolls: I think that this case is entirely consistent with the previous decisions in this court, and that the appeal fails.

The Lords Justices concurred, and the appeal was accordingly dismissed, with costs.

PATTISON *v.* WHITE AND CO., LTD.

THE case of Pattison *v.* White and Co., Ltd., came before the Court of Appeal, composed of the Master of the Rolls, and Lords Justices Stirling and Mathew, on the 5th inst., on the defendants' appeal from an award of the Judge of the Darlington County Court under the Workmen's Compensation Act, 1897, in favour of the plaintiff.

The facts were as follows:—The defendants were engaged under a contract with the Darlington Corporation in the construction of a system of light railways at Darlington. Clause 30 of the specification provided that the sand used for the permanent way construction was to be the best river or pit sand, and defendants selected a sandpit about 3¼ miles or 4 miles from the place where they were laying the permanent way, and they contracted with a man, named Wilkinson, to cart for them the sand from the pit to the railway works. A man named Pattison, who was employed by Wilkinson as a carman to cart the sand, while engaged in driving a cart from the pit to the works, fell from the cart and was run over and killed. The accident occurred about 2¼ miles from the works. The plaintiff, the widow of Pattison, claimed compensation from defendants under the Act of 1897, contending that the accident happened

"on or in or about" the engineering work within section 7 of the Act. The defendants admitted that they were "undertakers" in respect of the engineering work of constructing the railway, but they contended that, as the accident happened a long way from the works, the employment at the time of the accident could not be said to be "on or in or about" the engineering work, within section 7 of the Act. The County Court Judge held that the employment of the deceased man at the time of the accident was about the engineering work, notwithstanding the fact that the accident occurred at a considerable distance from the scene of the work where the sand would be ultimately unloaded or used. He accordingly made an award in plaintiff's favour for 187*l.* 4s. From this decision the defendants now appealed.

Mr. A. Powell, K.C., and Mr. W. Addington Willis appeared for the appellants, and Mr. Manisty, K.C., and Mr. G. Taylor for the respondent.

At the conclusion of the arguments of counsel, the Master of the Rolls, in giving judgment, said that, in his opinion, "on or in or about engineering work" denoted locality. In each limb of the definition of engineering work, following in this respect the scheme of the Act, physical locality was pointed out as that on or in or about which the employment must be at the time of the accident. That was laid down in a series of decisions in this court, and it was not competent for the County Court Judge to emancipate himself from those decisions. He thought the appeal should be allowed.

The Lords Justices concurred.

POINT UNDER THE FACTORY AND WORKSHOP ACT, 1891.

THE case of Horner *v.* Franklin came before Mr. Justice Darling, sitting without a jury in the King's Bench Division on the 10th inst., an action by the plaintiff against the defendants, Messrs. J. and L. Franklin, to recover 185*l.* 12s. alleged to be due under covenants contained in a lease, dated May 8, 1890, and made between the plaintiff and the defendants. Defendants denied liability.

It appeared that the plaintiff owned two warehouses or sheds, which constituted a factory within the meaning of the Factory and Workshop Acts. The premises in question were situated in Lamb-street, Spitalfields, and were let to the defendants by the lease before-mentioned. By the lease the defendants covenanted, during the term of the lease, to pay all existing and future taxes, rates, assessments, and outgoings of every description payable in respect of the demised premises (the landlord's property tax alone excepted). The plaintiff also covenanted within one month of the execution of the lease to brick up two doorways leading from the premises demised into No. 27, Lamb-street, and into the stable yard. The London County Council, on February 7, 1901, served the plaintiff with notice to carry out certain work under the Factory and Workshop Acts in respect of the premises, part of such work being to unblock the doors which had been bricked up. The plaintiff did this work at a cost of 185*l.* 12s., the amount he now sought to recover from the defendants as "out-goings" within the meaning of their covenant.

Mr. Poyser appeared for the plaintiff, and Mr. R. C. Glen for the defendants.

Mr. Poyser contended that the plaintiff was entitled to recover the amount claimed from the defendants under their covenant as "outgoings."

Mr. Glen, for the defendants, contended that the expenses were not "outgoings" within the meaning of the covenant. He also contended that, by section 7, sub-section 2 of the Factory and Workshop Act, 1891, the plaintiff should have applied to a County Court Judge, that being a condition precedent to his right to recover any part of these expenses from the tenants.

In the result, his lordship, in giving judgment, said he had come to the conclusion that the plaintiff ought to go to the County Court, and get a decision from the County Court Judge. He relied upon the words of the statute for saying that the plaintiff was bound to go to the County Court, and could not come to the High Court if he chose. The statute gave the plaintiff the only remedy that he had got, and it did not give him a remedy of any kind, except in the County Court. For these reasons he gave judgment for the defendants, with costs.

A stay of execution was granted, with the view to an appeal.

SOUTH KENSINGTON BUILDING DISPUTE.

IN the Court of Appeal, composed of Lords Justices Stirling and Mathew, on the 8th inst., the case of Bullingham *v.* Pocklington was heard on the appeal of the plaintiff from an order of Mr. Justice Bucknill in Chambers.

Mr. Montague Lush, K.C. (Mr. Groser with him), said that the order the plaintiff objected to was one depriving him of his right to have the action tried before a judge of the High Court and a special jury. The learned judge had ordered the case to be referred to Mr. Verey, the Official Referee. His submission was that he had no jurisdiction to make such an order. The action was brought by the plaintiff, a photographer, at South Kensington, against the defendant, who owned the adjoining house, for damages for negligent work in consequence of which plaintiff's house began to settle. There was a contract between the parties that, if the defendant did certain work, he should put the plaintiff's premises right. The defendant's case was that he had not been negligent, and that it was a mere coincidence that the subsidence occurred. The learned counsel said that there was nothing at all to entitle the defendant to have the case tried before an official referee.

Lord Justice Stirling: You are suing on a contract to make good any damage?

Mr. Lush said that was so. The defendant denied the contract and the negligence. He (counsel) said the plaintiff's premises had been very seriously damaged.

Lord Justice Stirling: If your case is based on negligence I think that is a proper case to be tried by a jury.

Mr. McCall, K.C., on behalf of the respondent, submitted that the order made by the learned judge was right. The learned judge had affirmed the order of the Master, sending the case to an official referee, unless the parties agreed on a special referee, and the Master's view was that the case should be decided by a surveyor. The ground on which he made the order was this:—The houses of the plaintiff and defendant adjoined, and before defendant rebuilt his premises he gave the usual party-wall notice under the Metropolitan Building Act, and thereupon the surveyors were appointed, and the contract was entered into, under which, in the usual way, defendant became liable to compensate for any disturbance, based on the under-pinning and using the party-wall. The only question here was, whether the under-pinning or alteration of defendant's premises actually caused the damage. The fact was that the plaintiff's premises had fallen away, not towards the defendant's work, but in the opposite direction where the Metropolitan and District Railway was, but he (counsel) said that was a question to be decided by a surveyor. He thought it was clear that if the damage to plaintiff's house was caused by the disturbance of the defendant, the plaintiff's house would inevitably have come towards the disturbance in stead of going the other way. It was difficult now to see the premises because the plaintiff's and defendant's premises were closed up altogether, the underground work was now covered up, and on the other side it was impossible to see it without the permission of the Metropolitan and District Railway. He submitted that this case came within the section which enabled the court to send it to the Official Referee, as it involved local investigation, and which could not, in the opinion of a judge, be conveniently dealt with by a jury. There would be no difficulty in getting a view by an official or special referee, but there would be great difficulty in getting a view by twelve jurymen. The defendant would have been perfectly satisfied to have the case sent to a special referee.

In the result their lordships held that it was a case which the plaintiff was entitled to have tried by a judge of the High Court and a jury, allowed the appeal, and made the costs, both in that court and in the court below, costs in the cause.

DAMAGE TO PROPERTY BY FLOODING.

THE hearing of the case of Benning *v.* the Ilford Gas Company concluded in the Court of Appeal, composed of the Master of the Rolls, and Lords Justices Stirling and Mathew, on the 4th inst., on the application of the defendants for judgment or new trial on appeal from verdict and judgment at trial before Mr. Justice Grantham and a special jury, in the King's Bench Division. The case was reported in the *Builder* of April 23 last.

In this case the plaintiff sought to recover from the defendants damages for injury done to his property by an alleged breach of a statutory duty and negligence of the defendants, and also by the defendants doing certain acts to the Aldersbrook, causing water to accumulate upon land, thus creating a nuisance.

Defendants, by their defence, denied that they had been guilty of any nuisance, negligence, or breach of statutory rights.

It appeared that the plaintiff owned property at Ilford, situate on land near the Aldersbrook. In June, 1903, his land was flooded, and his property damaged. Plaintiff's contention was that the defendants were bound to keep in repair a wall on the banks of the Aldersbrook, constructed to protect the land from floods, and that in June of last year, owing to the defendants' acts, the wall gave way and the land was flooded, and his property damaged. Running nearly parallel with the Aldersbrook was the river Roding. Defendants had obtained Parliamentary power to use some of the land between the Roding and the Aldersbrook for the purposes of their undertaking. The powers granted were conditional on the defendants providing a cutting to carry away water in flood time that formerly flowed from the Roding to the Aldersbrook. The plaintiff alleged that defendants had used the bed of the Aldersbrook and had broken down the wall, so that when the floods of June, 1903 came, the water flowed into the old bed of the Aldersbrook and through the breach in the wall that defendants had made, and so on to the plaintiff's land. The plaintiff said that, as defendants had failed to make the cutting they should have done, they had committed a breach of their statutory duties. At the trial the jury, in answer to specific questions left to them, found that the defendants, before action had created a nuisance, that defendants had not exercised proper methods in stopping up the Aldersbrook, that defendants were not negligent in the mode of placing their mains, and that the flood in question was caused by the defendants not providing against it. Mr. Justice Grantham decided that this was a verdict for the plaintiff, and referred the case to the official referee for the assessment of damages. The defendants now appealed on the ground that the verdict was against the weight of evidence, and that the learned judge had misdirected the jury.

Mr. Lawson-Walton, K.C., Mr. Duke, K.C., and Mr. Meyer appeared for the appellants, and Mr. Montague Shearman, K.C., and Mr. Crawford for the respondent.

At the conclusion of the arguments on behalf of the appellants, their lordships held that there was abundant evidence to support the verdict of the jury, and that there had been no misdirection by the learned judge. The appeal was therefore dismissed with costs.

THE BRIGHTON AND HOVE SEWAGE DISPUTE.

IN the House of Lords, on the 5th inst., judgment was delivered in the case of the Brighton Intercepting and Outfall Sewers Board *v.* the Mayor, Aldermen, etc., of Hove, on appeal from an order of the Court of Appeal reversing a judgment of Mr. Justice Kekewich in the Chancery Division.

The appeal had reference to the intercepting sewer along the sea front of Brighton and some of the neighbouring districts, and the question was, whether the Borough of Hove was entitled to pass its sewage into this intercepting sewer as they asserted. The Brighton Intercepting and Outfall Sewers Board contested the claim, alleging that the sewer was constructed for a special purpose—to intercept the sewage from certain well-defined districts—and that the right to pass the sewage from any outside district was never contemplated as part of the original scheme. The case depended chiefly on the construction to be placed on local Acts of Parliament and orders of the Local Government Board. Mr. Justice Kekewich held that the Borough of Hove had failed to establish the right they claimed, but the Court of Appeal reversed his decision, and gave judgment in favour of the claim of the respondents to discharge the sewage of Hove into the intercepting sewer. Hence the present appeal of the Brighton Intercepting and Outfall Sewers Board.

The Lord Chancellor (whose judgment was read by Lord Macnaghten) said that, after long consideration, and contrary to the impression he originally formed, he had come to the conclusion that the judgment of the Court of Appeal was right, and ought to be affirmed. The awkward collection of statutes with the powers of local bodies produced an impression of confusion, and of conflicting authorities which it was extremely difficult to disentangle; but he could not resist the reasons given by the Court of Appeal for the judgment at which they had arrived.

Lords Macnaghten, James of Hereford, and Lindley concurring, the appeal was dismissed, with costs.

ACTION BY THE URBAN DISTRICT COUNCIL OF WEYBRIDGE.

THE case of the Attorney-General and others *v.* the Urban Electric Supply Company, Ltd., came before Mr. Justice Joyce in the Chancery Division on the 3rd inst., on a

motion by the plaintiffs, the Attorney-General, and the Urban District Council of Weybridge for an injunction to restrain defendants until the trial from supplying electrical energy from their power-station at Weybridge beyond the urban district of Weybridge, and from breaking up any streets in the district for the purpose of laying down electric cables, service lines, or distributing mains for the supply of electricity or electrical energy outside the district.

The facts were these:—The Urban District Council of Weybridge are the sanitary and lighting authority for the district, and the defendants, having obtained a provisional order under the Electric Lighting Acts of 1882 and 1888, giving them powers to supply electricity in the urban district of Weybridge, by another provisional order, secured this year, received similar powers in regard to the adjoining district of Walton-on-Thames. For the purposes of their Weybridge undertaking defendants erected a power-station within the urban district of Weybridge, and broke up the streets in the district so as to lay electric mains for the supply of electrical energy to the district. Defendants now suggested supplying the district of Walton-on-Thames from their power-station in Weybridge, and for that purpose to break up the streets in Weybridge to lay the additional cables which would be required. The Urban District Council of Weybridge said that as this would necessitate the excavation of their roads, an increase in the size of the Weybridge generating station, and an increase of vibration and annoyance to the residents, they were entitled to the injunction claimed.

After hearing the arguments of counsel, his lordship granted an interim injunction, restraining the defendants until the trial of the action from exercising any of the powers conferred by the Weybridge Electric Lighting Order, or by means of lines or works laid down, or erected under such powers, supplying energy outside the area of supply mentioned in the said order, or breaking up streets within the area for the purpose of laying lines for the supply of energy unless and until the defendants should be licensed so to do by the Board of Trade.

Mr. Hughes, K.C., and Mr. F. Newbolt appeared for the plaintiffs, and Mr. Younger, K.C., and Mr. Clauson for the defendants.

THE WHITEHALL PAVING DISPUTE.

THE case of Alcott *v.* the Mayor, etc., of Westminster came before Mr. Justice Phillimore in the King's Bench Division on the 4th inst., on two summonses. In the first the plaintiff asked for an injunction to restrain defendants from interfering with his wood-paving in Whitehall, and for the appointment of an independent engineer, other than the engineer nominated in the contract between the parties, for the purpose of deciding certain questions which arose with regard to the paving. The plaintiff's case was that, when wood-paving had been laid and it became defective by reason of bad foundations, he was not liable to maintain it. His complaint was that defendants had served him with a notice to repair, and had afterwards employed a firm, named Messrs Mowlem, to repair the foundation and the wood-paving.

His lordship said that, though the plaintiff was entitled to do the repairs himself, he had refused to do it. He was therefore not entitled to an injunction. He thought the plaintiff must be given notice to repair, and he might assent or decline. In the cases in which the plaintiff declined, defendants would be at liberty to repair after giving plaintiff notice of their intention, so that the plaintiff might inspect and watch the work as it was being done.

In the second summons taken out by the defendants for an injunction to restrain the plaintiff from raking up the cement beneath the paving, the plaintiff, on certain terms, gave an undertaking not to interfere with the concrete.

His lordship directed that the costs of both summonses should stand over till the trial.

Mr. Montague Lush, K.C., and Mr. Daldy appeared for the plaintiff, and Mr. McCall, K.C., and Mr. Morton Smith for the defendants.

DISPUTE AS TO PAVING EXPENSES.

IN the King's Bench Division last week Mr. Justice Bigham delivered judgment in the case of the Mayor, etc., of Hampstead *v.* the Midland Railway Company, on a special case stated for the opinion of the court on a question of law arising in the action.

The action was brought by the plaintiffs to recover from the defendant Company 1,200*l.* 12*s.*, the apportioned amount they alleged to be due from the Company as the estimated expenses of paving a portion of a new street, called Westbere-road, Hampstead. The facts were shortly these:—The plaintiffs, on June 4, 1903, resolved to pave Westbere-road, and on September 25 served the defendants with notice demanding from them the sum alleged to be due from defendants as the owners of land "bounding or abutting" on the new street. Defendants contended that they were not the owners of the land in question within the meaning of the Metropolis Management Acts, 1855 and 1862, and therefore not liable for the expenses in question. It appeared from the special case that the defendants acquired the land, and held it subject to the provisions of section 18 of the Midland Railway Act, 1900, and which provided for the protection of the owner that the Company should not use any part of the sidings to be placed on the land acquired from him for any purpose except for the purpose of empty passenger trains; that the Company should acquire all the land of the owner up to Westbere-road, and should leave a strip of land 20 ft. wide along the whole length of Westbere-road, and should, at their own expense, plant and maintain the same with shrubs and trees to the reasonable satisfaction of the owner, and also fence off the land from the Westbere-road by an iron fence, 7 ft. high, the planting and fencing to be carried out within one year from the Company getting possession of such lands. The Company duly acquired the land referred to, and left a strip of land, 20 ft. wide, along and contiguous to the whole length of the west side of Westbere-road, and dealt with it in the manner provided by the section. They fenced off the land from the Westbere-road by an open, unclimbable fence 7 ft. high, and planted a quick-set hedge immediately inside the fence along its whole length. On the other side of the strip of land, the land sloped down to the edge of the railway, a cutting having been made for the purpose of its construction. The plaintiffs contended that the defendants were "the owners" of the land "bounding and abutting" on the new street within the meaning of the Metropolis Management Act, and were therefore liable for the amount claimed. The defendants, on the other hand, contended that the land was not land bounding or abutting on the street within the meaning of section 77 of the Metropolis Management Act, 1862; that the land was subject, in perpetuity, to the burden of public and private rights which deprived it of all beneficial value to the defendants, and was not such land as was intended by that section; and that the defendants were not the owners of the land within the meaning of that section, and sections 105 and 250 of the Metropolis Management Act, 1855.

Mr. Macmorran, K.C., and Mr. Courthorpe-Munroe appeared for the plaintiffs, and Mr. Montague Lush, K.C., and Mr. William Wills for the defendants.

Mr. Justice Bigham, in giving judgment, said he had looked into the cases bearing on the subject, and the result was that, when land was incapable of yielding rack-rent by reason of some public use, on or over such land, the owners of such land were not the owners of land within the meaning of the Metropolis Management Acts, and thus not liable to contribute, in respect of such land, to the expenses of paving a new street. But, where the burden of the land was imposed for the benefit of some individual or set of persons, the owners of such land were not relieved from having to contribute towards those expenses. In the present case the burden was placed on the land in question for the benefit of a Mr. Powell-Cotton by a private Act of Parliament, and it was competent for him by contract with the defendants to release them from their obligation towards him in respect of the land. In the other case, nothing but an Act of Parliament could release the land of the burden. He thought, therefore, that the defendants' contention failed, and he gave judgment for the plaintiffs for the amount claimed, with costs.

A stay of execution was granted with the view to an appeal.

ACTION BY A CIVIL ENGINEER FOR FEES.

IN the King's Bench Division, on the 8th inst., Mr. Justice Lawrance delivered a considered judgment in the case of Robinson *v.* Cadogan, an action by Professor Henry Robinson, the well-known civil engineer, against Earl Cadogan, to recover 401*l.* for professional services rendered in 1903 in connexion with a sewage scheme of the Corporation of Bury St. Edmund's. The defence was that the plaintiff had exceeded his instructions by preparing an alternative scheme to that proposed by the Corporation, and that his charges were excessive and unreasonable. The facts of the case and the evidence given were fully reported in last week's issue of the *Builder*.

Mr. Justice Lawrance, in giving judgment, after stating the facts and reviewing the evidence given at length, said that, in his opinion, the plaintiff's claim was an exaggerated one, work being done which was absolutely unnecessary, and which the plaintiff was not retained to do. Without going into figures he thought that the sum paid into court by Lord Cadogan (120*l.*) was sufficient compensation for the services rendered, and there would be judgment for the defendant, with costs.

PATENTS OF THE WEEK.

APPLICATIONS PUBLISHED.*

15,241 of 1903.—J. W. PHILLIPS: *Water Checks for the Shutting Joint of Casement Sashes, Doors, etc.*

Water checks, with rebated face-plate, with slot and plate at back, with pivot screw, also fixed cross-bars for the purpose of allowing a double arm between, with pivot pin screwed to bottom bar, to allow the above double arm to swing forward and backward, also a spring to force one end of double arm forward with a back casing-plate, screwed to fixed cross-bars.

15,340 of 1903.—W. W. TAYLOR: *Doors, Windows, etc.*

The door or window consists of two parts hinged together in the manner used in making partitions in rooms by means of a folding screen, by a second line of hinges parallel to the first line. The part between the first and second lines of hinges is preferably about two-sevenths of the whole width of the door or window; at the same distance as this from the second line of hinges, a pin or bolt, parallel to the lines of hinges, extends into a fixed straight bolt that runs along either of the sides of the door or window, perpendicular to the line of hinges when the door or window is shut, and causes that part of the door or window to move always in the plane that is occupied by the door or window when shut.

19,381 of 1903.—C. MAJOR: *Roofing Tiles.*

This invention relates to tiles having ribs and channels reversely disposed on the under and upper faces, so that adjacent tiles engage when they are placed together in roofing. The tile, constructed according to this invention, is provided, on its upper face, with ribs so arranged as to form a channel near the edges of the upper portion of the tile, the said channel having a passage therein at the lower end leading towards the central plane portion of the said upper face. This channel extends from the upper end of the tile to preferably about halfway down the length thereof, and on the opposite edges or sides of the tile are multiple projections and recesses reversely disposed on the two opposite sides, so that when the tiles are arranged side by side they are engaged or locked together.

19,578 of 1903.—E. WALKER: *Means for Protecting Door and other Locks.*

This invention relates to means for protecting door and other locks. The ordinary key-hole is covered with a hinged-plate, which is capable of being locked and unlocked so that it is impossible to tamper with the main lock without first operating the protector lock. The key-hole and lock of the said protector may be materially smaller than the main lock, so as to afford little scope for tampering with it. The protector-plate hinges within a metal frame and in such a manner that, when the protector-plate is locked within its frame, its edge is flush with the frame. The hinge employed for the plate is preferably an edge-hinge. The said frame for the hinged protector-plate may be secured to the door and over the key-hole of the door, by providing the top and bottom of the frame with an inwardly projecting lug-piece, which is screwed into the door.

19,741 of 1903.—H. C. WALKER: *Lifts and Hoists.*

Lifts or hoists, consisting, in the combination with the controlling gear, of an electrically-controlled locking device, adapted to engage both the controlling rope and suitably-shaped guides carried by the cage, whereby, on the interruption of the current through the locking device, such device is brought into contact with the rope of the controlling gear, so that on any movement, as between the latter and cage, a jamming action is set up.

19,998 of 1903.—L. E. BUTCHER: *Flushing Cisterns for Lavatories, Water-closets, etc.*

This consists in the combination with a flushing cistern, of a disinfectant reservoir having a discharge cock normally closed by a

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

weighted lever, which is in connexion with the operating chain of the flushing cistern, so that the cock is opened simultaneously with the operation of the flushing cistern.

4,108 of 1904.—J. SALT: *Window Frames and Sashes.*

This consists in the combination in a window frame and sashes, of vertical grooves in the frame, with racks bearing in said grooves, engaging with pinions carried in the frame, ears made with said racks, and pivots carried in the sashes and to bear in said ears.

6,479 of 1904.—J. E. GUTTERIDGE: *A Lock for Windows, etc.*

A sash-locking or fastening device, consisting of two parts, each comprising a pair of plates held at a proper distance apart, one pair being attached to one of the sashes, and the other pair to the other sash, one of the pairs of plates having a semi-circular plate turnable on a pin, in which plate is a curved slot which, on moving the said semi-circular plate across the space between the two sashes, will receive a pillar connecting the upper and lower plates to the other pair, means being provided for locking the semi-circular plate in its required position.

9,348 of 1904.—W. FLINT and A. E. FLINT: *Chimney Pots, Ventilating-shaft Tops, etc.*

A chimney pot, consisting of an up-take tube, having lateral openings or apertures in two of its opposite sides, and an inwardly rising guide-plate, or baffle, in connexion with each lateral opening.

10,517 of 1904.—G. H. BOOTH: *Construction of Register Grates.*

In carrying out this invention a set of one or more bars is made, into which hooks are placed at the back of their upright sides which fit into a series of two or more slots formed in the upright space of the fireplace, thus holding the bars in position for use.

13,137 of 1904.—J. GREEN and W. GREEN AND CO., LTD.: *Cooking Ranges, and the like.*

A cooking range, or the like, consisting in the combination with an oven having mains for being heated from a fire, of a recess at the bottom, gas-pipes leading from the recess within the oven, an air-duct from the recess to the back of the oven, with or without air-pipes adjacent to the gas-pipes.

13,214 of 1904.—C. MCCALLUM: *Window, and like Fasteners.*

A window and like fastener, composed of two members capable of being clamped together by screw and nut devices, the one member having a slotted extension in which the screw works, and the other member having a boss and milled nut for jamming said screw, whereby the window can be locked either with its upper sash drawn down or the lower sash raised, or with both sashes respectively raised and drawn down within limits.

13,319 of 1904.—D. T. DONALD: *Decorative Coverings, or Hangings for Walls, or other Surfaces.*

A covering or hanging for walls, or other surfaces, composed of a face of canvas, or other woven fabric with a thickness of paper, which may have been previously rendered damp-proof or water-proof, pasted or cemented to the inner surface thereof.

13,446 of 1904.—G. L. ROLLINS: *Machines for Applying Cement to Stock.*

The use, in a machine for applying cement to stock, comprising a rotatable brush, a tank, having a valve, and means to open the valve to discharge cement on the brush, of a wiper, arranged between the valve and the axis of rotation of the brush on a chord of the circular path of the brush, and slotted that the bristles at the upper edge of the brush may travel therethrough, the wiper wiping from the bristles excess of cement towards the periphery of the brush.

17,379 of 1904.—A. B. JOHNSON: *Improvements Relating to Manhole Covers, etc.*

This invention relates to manhole covers, and the like, and has for its object to provide a manhole cover in which there shall be an absolutely tight joint of great durability. According to the invention the cover frame is recessed so as to form an underface on each side thereof, by which the frame is mounted in the brickwork with a continuous four-sided channel protruding downwardly, within which the flange of a second cover lies. The upper part of the frame is provided with a continuous four-sided channel, within which the flange of the first cover lies. The second cover is laid upon the lower inner edge of the channel of the cover frame, upon which rubber or other packing material is laid, so that thus a dry and tight joint is secured. The second cover is pressed in position against the edge aforesaid by means of a locking-bar or bars, which may be secured upon the second cover, and may be turned to engage with inclined surfaces provided upon the inner wall of the frame. The joint for the first cover may be made by the use of grease, tallow, sand, or any other similar and suitable material.

16,500 of 1903.—A. E. GRAY: *Construction of Tanks, Reservoirs, and other like articles.*

Tanks, and like articles, consisting in the employment of plates, in combination with a sectional frame, such plates being held in position and secured to the frame by means of angle knees or clamps, and bolts and nuts.

16,860 of 1903.—F. PLATT and L. PLATT: *Dies for Use with Tile Presses for Making Tiles, Slabs, etc.*

The construction of metallic die blocks, of any desired shape and size, with detachable metallic strips, triangular in transverse section th an inclined or bevelled inner side, or a curved or rounded inner side secured to their sides or peripheries for use in making tiles with bevelled, inclined, or rounded lower edges from "dust" clay, or the like suitable material, so as to reduce their area of contact when laid or placed in position, and make close joints.

19,298 of 1903.—M. J. ADAMS: *Lavatories.*

This invention consists in the arrangement for supporting the lavatory and carrying the waste, and is particularly suited to a range of basins. A hollow arm is formed which supports the basin and carries the waste liquid down to a pipe connexion placed horizontally on the wall-face, this horizontal pipe having sockets or connexions so formed that pipe connexions may unite the basins and carry the waste away.

19,724 of 1903.—J. T. WRIGHT and J. HOLT: *Flushing Cisterns for Water-closets, Urinals, and the like purposes.*

Flushing devices for water-closets, urinals, and the like, consisting in the combination of a main syphon adapted to discharge the main compartment, and an auxiliary syphon communicating with the main syphon, or with the drop or discharge pipe connected thereto, and adapted to discharge the sectional compartment, the said auxiliary syphon being perforated at or near the bend to prevent continuous syphoning.

19,736 of 1903.—F. ROUGH: *Method of, and Means for, Making Joints in all Materials, and Especially in Woodwork, water-tight, and otherwise Wind, Weather, and Rain Proof.*

A means for creating a tight joint in and between two pieces of material, consisting of making one or more strips of indiarubber, or other material, duly to fill two or more complementary grooves, formed in such pieces of material, and arranged facing each other.

22,081 of 1903.—A. EMANUEL AND SONS, LTD., T. C. ROSE, and J. WOOD: *Apparatus for Testing Drains.*

The plug consists of a pair of discs (preferably mounted on wheels), connected together by a spindle or frame, and supporting the ends of a cylinder of flexible material. One of the discs is provided with means of attaching to it the push-rod and the end of a flexible pipe, the other end of which is fixed to an air-pump. In testing a drain, the plug is pushed in a distance which is known by the number of lengths of push-rod employed, and is inflated by the air-pump, the drain being then filled with water. After the test-plug is deflated, it is pushed or pulled to another point, and the test is repeated, and so until the exact position of the leak is determined.

2,649 of 1904.—C. H. HUTCHINGS: *Machines for Moulding Building Blocks and Artificial Stone.*

A machine for moulding building blocks and artificial stone, consisting in the combination of the main frame, a mould-box journalled therein, consisting of a bottom side, two end sides, and a front side connected to the bottom side, a removable side opposed to the front side, and means for temporarily locking the sides together.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

July 29.—By ROBERTS, SON, & TORY (at Yeovil).

Yeovil, Somerset.—Dorchester-rd., "The Red House Inn" and 2 a. 1 r. 20 p., f., p. .. £1,870

July 30.—By H. H. ARNOLD (at Norwich).

Wilby, etc., Norfolk.—"The Moat Hall Farm," 152 a. 0 r. 2 p., f., p. 1,000

August 3.—By FRASER & HEIGH.

Hastings, Sussex.—9 and 10, Earl-st., with factory adjoining, u.t. 66½ yrs., g.r. 11*l.*, y.r 170*l.* 2,225

Middle-st., "Clarence Mews" (stabling), f., y.r. 95*l.* 1,400

Clapham.—14 and 16, Courland-gr., u.t. 10 yrs., g.r. 9*l.* 10s., y.r. 64*l.* 200

August 4.—By LINNETT & LANE.

Harlesden.—22 and 24, Fairlight-av., u.t. 83½ yrs., g.r. 12*l.*, y.r. 70*l.* £720

August 5.—By H. V. CHEW.

Leytonstone.—11, Wallwood-rd., u.t. 74 yrs., g.r. 6*l.* 6s., e.r. 42*l.* 385

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beer-house; p.h. for public-house; o. for offices; s. for shops; ct. for court.

MEETINGS.

WEDNESDAY, AUGUST 17.

Builders' Foremen and Clerks of Works' Institution.—Ordinary Meeting of the Members. 8 p.m.

Institute of Sanitary Engineers, Ltd.—Election Committee at 3 o'clock. General Purposes and Finance Committee at 5 o'clock.

SATURDAY, AUGUST 20.

Northern Architectural Association.—Visit to Sunderland.

TO CORRESPONDENTS.

F. S. (Below our limit).——E. & C. (Amounts should have been stated).

NOTE.—The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, manuscripts, or other documents sent to or left at this office, unless he has specially asked for them.

Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

We are compelled to decline pointing out books and giving addresses.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and not to the Editor.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£	s.	d.		
Hard Stocks.	1	16	0	per 1000	alongside, in river.
Rough Stocks and Grizzles	1	13	0	,,	,, ,,
Facing Stocks ...	2	12	0	,,	,, ,,
Shippers	2	10	0	,,	,, ,,
Flettons	1	10	0	,,	at railway depôt.
Red Wire Cuts ...	1	13	0	,,	,, ,,
Best Fareham Red	3	12	0	,,	,, ,,
Best Red Pressed Ruabon Facing	5	0	0	,,	,, ,,
Best Blue Pressed Staffordshire ...	4	4	0	,,	,, ,,
Do. Bullnose	4	10	0	,,	,, ,,
Best Stourbridge Fire Bricks.....	4	8	0	,,	,, ,,
GLAZED BRICKS.					
Best White and Ivory Glazed Stretchers	13	0	0	,,	,, ,,
Headers	12	0	0	,,	,, ,,
Quoins, Bullnose, and Flats.....	17	0	0	,,	,, ,,
Double Stretchers	19	0	0	,,	,, ,,
Double Headers...	16	0	0	,,	,, ,,
One Side and two Ends	19	0	0	,,	,, ,,
Two Sides and one End	20	0	0	,,	,, ,,
Splays, Chamferred, Squints	20	0	0	,,	,, ,,
Best Dipped Salt Glazed Stretchers, and Header	12	0	0	,,	,, ,,
Quoins, Bullnose, and Flats.....	14	0	0	,,	,, ,,
Double Stretchers	15	0	0	,,	,, ,,
Double Headers...	14	0	0	,,	,, ,,
One Side and two Ends	15	0	0	,,	,, ,,
Two Sides and one End	15	0	0	,,	,, ,,
Splays, Chamferred, Squints	14	0	0	,,	,, ,,
Second Quality White and Dipped Salt Glazed	2	0	0	,,	less than best.

BRICKS, &c. (*continued*).

	s.	d.		
Thames and Pit Sand	7	3	per yard,	delivered.
Thames Ballast	6	0	„	„
Best Portland Cement	30	0	per ton,	„
Best Ground Blue Lias Lime	21	0	„	„

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime.....12s. 0d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 6d. per ton at rly. dpt.

STONE.

	s.	d.		
BATH STONE—delivered on road waggons, Paddington Depôt	1	6½	per ft. cube.	
Do. do. delivered on road waggons, Nine Elms Depôt	1	8½	„	„
PORTLAND STONE (20 ft. average)—Brown Whitbed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf	2	1	„	„
White Basebed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf	2	2½	„	„

	s.	d.		
Ancaster in blocks	1	11	per ft. cube,	deld. rly. depôt.
Beer „	1	6	„	„
Greenshill „	1	10	„	„
Darley Dale in blocks	2	4	„	„
Red Corsehill „	2	5	„	„
Closeburn Red Freestone	2	0	„	„
Red Mansfield „	2	4	„	„

YORK STONE—*Robin Hood Quality.*

Scappled random blocks	2	10	„	„
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	3	per ft. super.	„
6 in. rubbed two sides ditto, ditto	2	6	„	„
3 in. sawn two sides slabs (random sizes)	0	11½	„	„
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7½	„	„
1½ in. to 2 in. ditto, ditto	0	6	„	„

HARD YORK—

Scappled random blocks	3	0	per ft. cube,	„
6 in. sawn two sides, landings to sizes (under 40 ft. super.)	2	8	per ft. super.	„
6 in. rubbed two sides ditto	3	0	„	„
3 in. sawn two sides (slabs random sizes)	1	2	„	„
2 in. self-faced random flags	0	5	„	„
Hopton Wood (Hard Bed) in blocks	2	3	per ft. cube,	deld. rly. depôt.
„ „ „ 6 in. sawn both sides landings	2	7	per ft. super.	deld. rly. depôt.
„ „ „ 3 in. do.	1	2½	„	„

SLATES.

in. in.	£	s.	d.		
20 x 10 best blue Bangor	13	2	6	per 1000 of 1200 at	r. d.
20 x 12 „ „	13	17	6	„	„
20 x 10 first quality „	13	0	0	„	„
20 x 12 „ „ „	13	15	0	„	„
16 x 8 „ „ „	7	5	0	„	„
20 x 10 best blue Portmadoc	12	12	6	„	„
16 x 8 „ „	6	12	6	„	„
20 x 10 best Eureka unfading green	15	17	6	„	„
20 x 12 „ „	18	7	6	„	„
18 x 10 „ „	13	5	0	„	„
16 x 8 „ „	10	5	0	„	„
20 x 10 permanent green	11	12	6	„	„
18 x 10 „ „	9	12	6	„	„
16 x 8 „ „	6	12	6	„	„

TILES.

	s.	d.		
Best plain red roofing tiles	42	0	per 1000 at	rly. depôt.
Hip and Valley tiles	3	7	per doz.	„ „
Best Broseley tiles	50	0	per 1000	„ „
Do. Ornamental tiles	52	6	„	„ „
Hip and Valley tiles	4	0	per doz.	„ „
Best Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000	„ „
Do. Ornamental do	60	0	„	„ „
Hip tiles	4	0	per doz.	„ „
Valley tiles	3	0	„	„ „
Best Red or Mottled Staffordshire do. (Peakes)	51	9	per 1000	„ „
Do. Ornamental do	54	6	„	„ „
Hip tiles	4	1	per doz.	„ „
Valley tiles	3	8	„	„ „
Best "Rosemary" brand plain tiles	48	0	per 1000	„ „
Best Ornamental tiles	50	0	„	„ „
Hip tiles	4	0	per doz.	„ „
Valley tiles	3	8	„	„ „
Best "Hartshill" brand plain tiles, sand faced	50	0	per 1 00	„ „
Do. pressed	47	6	„	„ „
Do. Ornamental do	50	0	„	„ „
Hip tiles	4	0	per doz.	„ „
Valley tiles	3	6	„	„ „

WOOD. At per standard.

	£	s.	d.	£	s.	d.
Deals: be :13 in. by 11 in. and 4 in. by 9 in. and 11 in	15	10	0	16	10	0
Deals: best 3 by 4	14	10	0	15	10	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	10	0	12	10	0
Battens: best 2½ by 6 and 3 by 6	0	10	0	less than 7 in. and 8 in.		
Deals: seconds	1	0	0	less than best		
Battens: seconds	0	10	0	„ „	„	
2 in. by 4 in. and 2 in. by 6 in.	9	0	0	9	10	0
2 in. by 4½ in. and 2 in. by 5 in.	8	10	0	9	10	0
Foreign Sawn Boards—1 in. and 1¼ in. by 7 in.	0	10	0	more than battens.		
1 in.	1	0	0	„		

WOOD (*continued*).

	At per load of 50 ft.					
	£	s.	d.	£	s.	d.
Fir timber: best middling Danzig or Memel (average specification)	4	10	0	5	0	0
Seconds	4	5	0	4	10	0
Small timber (8 in. to 10 in.)	3	12	6	3	15	0
Small timber (6 in. to 8 in.)	3	0	0	3	10	0
Swedish balks	2	15	0	3	0	0
Pitch-pine timber (50 ft. average)	3	5	0	3	15	0

JOINERS' WOOD.	At per standard.					
	£	s.	d.	£	s.	d.
White Sea: first yellow deals, 3 in. by 11 in	23	0	0	24	0	0
3 in. by 9 in.	21	0	0	22	10	0
Battens, 2½ in. and 3 in. by 7 in.	17	0	0	18	10	0
Second yellow deals, 3 in. by 11 in	18	10	0	20	0	0
„ „ 3 in. by 9 in.	17	10	0	19	0	0
Battens, 2½ in. and 3 in. by 7 in.	13	10	0	14	10	0
Third yellow deals, 3 in. by 11 in. and 9 in.	15	10	0	16	10	0
Battens, 2½ in. and 3 in. by 7 in.	11	10	0	12	10	0
Petersburg: first yellow deals, 3 in. by 11 in.	21	0	0	22	10	0
Do. 3 in. by 9 in.	18	0	0	19	10	0
Battens	13	10	0	15	0	0
Second yellow deals, 3 in. by 11 in.	16	0	0	17	0	0
Do. 3 in. by 9 in.	14	10	0	16	0	0
Battens	11	0	0	12	10	0
Third yellow deals, 3 in. by 11 in.	13	10	0	14	0	0
Do. 3 in. by 9 in.	13	0	0	14	0	0
Battens	10	0	0	11	0	0
White Sea and Petersburg:—						
First white deals, 3 in. by 11 in.	14	10	0	15	10	0
„ „ 3 in. by 9 in.	13	10	0	14	10	0
Battens	11	0	0	12	0	0
Second white deals, 3 in. by 11 in.	13	10	0	14	10	0
„ „ 3 in. by 9 in.	12	10	0	13	10	0
„ „ battens	9	10	0	10	10	0
Pitch-pine: deals	16	10	0	20	0	0
Under 2 in. thick extra	0	10	0	1	0	0
Yellow Pine—First, regular sizes	40	0	0	upwards.		
Oddments	28	0	0	„		
Seconds, regular sizes	30	0	0	„		
Yellow Pine oddments	25	0	0	„		
Kauri Pine—Planks, per ft. cube	0	3	6	0	5	0
Danzig and Stettin Oak Logs—Large, per ft. cube	0	2	6	0	3	6
Small „ „	0	2	3	0	2	6
Wainscot Oak Logs, per ft. cube	0	5	0	0	5	6
Dry Wainscot Oak, per ft. sup. as inch	0	0	8	0	0	9
¾ in. do. do.	0	0	7	—		
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0	0	9	0	1	0
Selected, Figury, per ft. sup. as inch	0	1	6	0	2	6
Dry Walnut, American, per ft. sup. as inch	0	0	10	0	1	0
Teak, per load	17	0	0	21	0	0
American Whitewood Planks, per ft. cube	0	4	0	—		

Prepared Flooring—	Per square.					
	£	s.	d.	£	s.	d.
1 in. by 7 in. yellow, planed and shot	0	13	6	0	17	6
1 in. by 7 in. yellow, planed and matched	0	14	0	0	18	0
1¼ in. by 7 in. yellow, planed and matched	0	16	0	1	0	0
1 in. by 7 in. white, planed and shot	0	12	0	0	14	6
1 in. by 7 in. white, planed and matched	0	12	6	0	15	0
1¼ in. by 7 in. white, planed and matched	0	15	0	0	16	6
¾ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0	11	0	0	13	6
1 in. by 7 in. do. do.	0	14	0	0	18	0
¾ in. by 7 in. white do. do.	0	10	0	0	11	6
1 in. by 7 in. do. do.	0	11	6	0	13	6

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton.					
	£	s.	d.	£	s.	d.
Rolled Steel Joists, ordinary sections	6	5	0	7	5	0
Compound Girders, ordinary sections	8	2	6	9	5	0
Angles, Tees and Channels, ordinary sections	7	17	6	8	17	0
Flitch Plates	8	5	0	8	15	0
Cast Iron Columns and Stanchions including ordinary patterns	7	2	6	8	5	0

METALS.

	Per ton, in London.					
IRON—	£	s.	d.	£	s.	d.
Common Bars	7	5	0	7	15	0
Staffordshire Crown Bars, good merchant quality	7	15	0	8	5	0
Staffordshire "Marked Bars"	10	0	0	—		
Mild Steel Bars	8	15	0	9	5	0
Hoop Iron, basis price	9	5	0	9	10	0
„ „ Galvanized	17	10	0	—		

(*And upwards, according to size and gauge.)

Sheet Iron, Black—						
Ordinary sizes to 20 g.	9	15	0			—
„ „ 24 g.	10	15	0			—
„ „ 26 g.	12	5	0			—
Sheet Iron, Galvanized, flat, ordinary quality—						
Ordinary sizes—6 ft. by 2 ft. to 3 ft. to 20 g.	12	15	0			—
Ordinary sizes to 22 g. and 24 g.	13	5	0			—
„ „ 26 g.	14	5	0			—
Sheet Iron, Galvanized, flat, best quality—						
Ordinary sizes to 20 g.	16	0	0			—
„ „ 22 g. and 24 g.	16	10	0			—
„ „ 26 g.	18	0	0			—
Galvanized Corrugated Sheets—						
Ordinary sizes 6 ft. to 8 ft. 20 g.	12	10	0			—
„ „ 22 g. and 24 g.	13	0	0			—
„ „ 26 g.	13	15	0			—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	11	15	0			—
Best Soft Steel Sheets, 22 g. & 24 g.	12	15	0			—
„ „ 26 g.	14	0	0			—
Cut nails, 3 in. to 6 in.	9	0	0	9	10	0

(Under 3 in., usual trade extras.)

LEAD, &c.

	Per ton, in London.					
	£	s.	d.	£	s.	d.
LEAD—Sheet, English, 3lb. and up	14	7	6			—
Pipe in coils	14	17	6			—
Soil pipe	17	7	6			—
Compo pipe	17	7	6			—
ZINC—Sheet—						
Vieille Montagne ton	27	0	0			—
Silesian	26	15	0			—
COPPER—						
Strong Sheet per lb.	0	0	10			—
Thin „ „	0	0	11			—
Copper nails „	0	0	10			—
BRASS—						
Strong Sheet „	0	0	9½			—
Thin „ „	0	0	10			—
TIN—English Ingots „	0	1	3½			—
SOLDER—Plumbers' „	0	0	6½			—
Tinmen's „	0	0	8			—
Blowpipe „	0	0	9			—

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds	2½d.	per ft. delivered.
„ fourths	1¾d.	„ „
21 oz. thirds	3¼d.	„ „
„ fourths	2¼d.	„ „
26 oz. thirds	4d.	„ „
„ fourths	3¼d.	„ „
32 oz. thirds	5d.	„ „
„ fourths	4¼d.	„ „
Fluted Sheet, 15 oz.	3d.	„ „
„ 21 oz.	4d.	„ „
¼ Hartley's Rolled Plate	1¼d.	„ „
⅛ „ „ „	1½d.	„ „
½ „ „ „	2¾d.	„ „

OILS, &c.

		£	s.	d.
Raw Linseed Oil in pipes	per gallon	0	1	7
„ „ „ in barrels	„	0	1	8
„ „ „ in drums	„	0	1	10
Boiled „ „ in pipes	„	0	1	9
„ „ „ in barrels	„	0	1	10
„ „ „ in drums	„	0	2	0
Turpentine, in barrels	„	0	3	6
„ in drums	„	0	3	8
Genuine Ground English White Lead	per ton	18	15	0
Red Lead, Dry	„	18	10	0
Best Linseed Oil Putty	per cwt.	0	6	6
Stockholm Tar	per barrel	1	12	0

VARNISHES, &c.

	Per gallon.		
	£	s.	d.
Fine Pale Oak Varnish	0	8	0
Pale Copal Oak	0	10	6
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard-drying Oak, for seats of Churches	0	14	0
Fine Elastic Carriage	0	12	6
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	16	0
Finest Pale Durable Copal	0	18	0
Extra Pale French Oil	1	1	0
Eggshell Flatting Varnish	0	18	0
White Copal Enamel	1	4	0
Extra Pale Paper	0	12	0
Best Japan Gold Size	0	10	6
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	6
Berlin Black	0	16	0
Knotting	0	10	0
French and Brush Polish	0	10	0

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the rate of 19s. per annum (52 numbers) PREPAID. To all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, &c., 26s. per annum. Remittances (payable to J. MORGAN) should be addressed to the Publisher of "THE BUILDER," Catherine-street, W.C.

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TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

ABERCANAID.—For erecting a Calvinistic Methodist Chapel, for the Welsh Calvinistic Methodist Connexion. Mr. C. M. Davies, architect, 112, High-street, Merthyr:—

W. C. Jones, Bethesda-street, Merthyr* .. £1,700

BIRMINGHAM.—For erecting club buildings in Great Charles-street, for the Council of the University of Birmingham. Messrs. Cossins, Peacock, & Bewlay, architects. Quantities by Mr. G. Lawrence Watson, 39, Newhall-street, Birmingham:—

J. Parnell & Son	£7,515 0	F. Davis	£6,997 0
J. Archer	7,439 0	J. Barnsley & Sons	6,988 0
T. Lowe & Sons	7,390 0	W. Sapcote & Sons	6,977 0
E. Chatwin	7,347 14	J. Dallow & Sons	6,970 0
H. Willcock & Co.	7,320 0	T. Elvins	6,870 0
B. Whitehouse & Sons	7,245 0	Smith & Pitts	6,856 0
J. A. Turton	7,098 0	W. H. Gibbs	6,765 0
T. A. Cole & Son	7,000 0	R. Fenwick, Ltd.*	6,625 0

TENDERS.—*Continued on page 193.*

COMPETITIONS, CONTRACTS AND PUBLIC APPOINTMENTS.

(For some Contracts, &c., still open, but not included in this List, see previous issues.)

COMPETITION.

Nature of Work.	By whom Required.	Premiums.	Designs to be Delivered
*Municipal Offices and County Court	Bromley Borough Council	Not stated	No date.

CONTRACTS.

Nature of Work or Materials.	By whom Advertised.	Forms of Tenders, etc., supplied by	Tenders to be Delivered
Electric Lighting, Springburn District Library	Glasgow Corporation	W. B. Whitie, Architect, 219, St. Vincent-street, Glasgow	Aug. 12
Heating & Ventilating, Springburn District Library	do.	do.	do.
Fifteen Cottages, Walls, Outhouses, etc.	Tantobie Co-operative Society	W. Hall, Secretary, Society's Offices	Aug. 15
2 Villa Resids., Willow Field Est., Rochdale-rd., Halifax		T. Kershaw, Architect, L. and Y. Bank-chambers, Halifax	do.
Improvement Works, Emscote-grove, etc.	Halifax Highways Committee	J. Lord, C.E., Borough Engineer, Town Hall, Halifax	do.
Stores	Wakefield Light Railway Co.	H. England, Belle Isle, Wakefield	do.
Council School, Sale	Sale & Ashton Sub-Com. for Educa.	E. J. Thompson & Son, Architects, 19, Dickinson-st., Manchester	do.
Racking, Heating, etc., Laundry, Cardiff Infirmary		E. Seward, F.R.I.B.A., Queen's-chambers, Cardiff	do.
Street Improvement Works	Stockton-on-Tees Corporation	M. H. Sykes, Borough Engineer, Town Hall, Stockton-on-Tees	do.
Electric Light Installation at Technical School	Plymouth Education Authority	H. J. Snell, Architect, 11, The Crescent, Plymouth	do.
1,300 yds. of Cast-Iron Water Mains, etc.	Preston Guardians	Mr. Whitwell, Clerk of Works, Fulwood Workhouse, Preston	do.
Weighbridge at Electricity Works	Farnworth U.D.C.	J. D. Pember, Electrical Engineer, Electricity Works, Farnworth	do.
Two Lancashire Steam Boilers, Wesham Workhouse	Fylde Guardians	Haywood & Harrison, Architects, Accrington	do.
Sixty-one Spans of 40 ft.	Bengal & N.W.Ry. Co., Ltd.	A. Izat, 237, Gresham House, Old Broad-street, E.C.	do.
Forty-seven Spans of 20 ft.	do.	do.	do.
Outfall Sewer, Tanks, etc., Millisle	Lord Dunleath	J. Russell, C.E., 22, Waring-street, Belfast	do.
Stable, Harness Rm., etc., Tramway Depôt, Birchills	Walsall Corporation	Borough Surveyor, Bridge-street, Walsall	do.
Alterations, West Auckland Workmen's Club		F. H. Livesay, Architect, Bishop Auckland	do.
Roadworks, East-parade, Shildon	Urban District Council	C. Heslop, Surveyor, Shildon, Durham	do.
Mission Hall, Bowerham, Lancaster	Centenary Congregational Church	C. B. Pearson, Architect, 12a, Cheapside, Lancaster	do.
Rebuilding Shop, 178, High-street, Dowlais		On the Premises	do.
House, Llantarnam	Mr. E. Cuthbert	C. Fox, Architect, Newport, Mon.	do.
Extension of Boiler House at Workhouse	Bramley Guardians	C. S. Nelson, Architect, Sun-buildings, 15, Park-row, Leeds	Aug. 16
Alterations to Administrative Block, for Nurses' Home	do.	do.	do.
Plate Girder Spans	Secretary of State for India	Director-General of Stores, India Office, Whitehall, S.W.	do.
Alteration to Out-Offices at Ferham Council School	Rotherham Education Committee	J. Platts, Architect, High-street, Rotherham	do.
Alterations at St. Ann's Boys' School, Rotherham	do.	do.	do.
Headquarters, 3rd V.B. Seaforth Highlanders		W. C. Reid, Architect, Elgin	Aug. 17
Alterations to Works in Charles-street, Halifax	Automatic Standard Screw Co.	Jackson & Fox, Architects, Rawson-street, Halifax	do.
Weldless Steel Tubes	Stockport Gas, etc., Committee	S. Meunier, Gasworks, Portwood, Stockport	do.
500 Tons Oxide of Iron Purifying Material	Salford Gas Committee	W. W. Woodward, Engineer, Gas Offices, Bloom-street, Salford	Aug. 18
Three Blocks of Buildings, Clonmel Lunatic Asylum	Joint Committee of Management	J. F. Fuller, Architect, 179, Great Brunswick-street, Dublin	do.
Manholes & C.-I. Pipe Sewers under Birmingham Canal	Tipton U.D.C.	W. H. Jukes, Surveyor, Public Offices, Owen-street, Tipton	do.
Completion of Council Schools, Draycott		F. S. Antliff, Architect, Draycott, near Derby	do.
Fifty-four cwt. of Foyer's Calcium Carbide	Magherafelt Guardians	W. Hastings, Clerk, Board Room, Workhouse, Magherafelt	do.
Enlarging Ladies' College, Arnside, near Kendal		S. Shaw, F.R.I.B.A., Architect, Kendal	do.
Underground Convenience, Mitchell-street	Glasgow Corporation	Office of Public Works, City-chambers, 64, Cochrane-st., Glasgow	do.
Workmen's Hall, etc., New Tredegar		James & Morgan, Architects, Charles-street-chambers, Cardiff	Aug. 19
Making-up and Paving Decoy-road	Newton Abbot U.D.C.	L. Stevens, Surveyor, Town Hall, Courtenay-street, Newton Abbot	do.
Alliott & Patons Washington Lyons Disinfector	Windsor Town Council	Borough Surveyor, Alma-road, Windsor	do.
Relaying Pipe Sewer	Richmond (Yorks) Corporation	T. H. Hailstone, Borough Surveyor, Richmond, Yorks.	do.
Hall, Findochty		J. Mair, Boat Builder, Findochty	do.
Cleaning, Painting, etc., Union Offices, St. James-rd.	Dudley Guardians	E. G. Coslett, Architect, Dudley	do.
*New Coastgd. Bldgs., Essex Hill, Alderney, Chan. Isl.	Admiralty	Superintending Civil Engineer, H.M. Breakwater, Portland	do.
*Add. Coastguard Buildings at Whitelands, nr. Seaton	do.	do.	do.
Repair of Sea Wall and Apron, etc., Kilclief	Down County Council	J. Heron, County Surveyor, Court House, Downpatrick	Aug. 20
Repair of Walls, etc., Milquarter Bay	do.	do.	do.
Small Sewage Disposal Works, Dutton, Preston Brook	Runcorn R.D.C.	G. E. Bolshaw, Architect, 189, Lord-street, Southport	do.
New Wing, etc., St. Anne's Mon., Sutton, St. Helen's		R. Curran & Son, Architects, Cairo-street, Warrington	do.
Church, Thatto Heath, St. Helen's		do.	do.
Cartage of Road Material	Bedford R.D.C.	District Surveyor, Bedford	do.
Repair of South Aisle, Hanslope Church		Rev. W. J. Harkness, Vicar, Hanslope	do.
Repairing Nine Houses at Bedlinog		C. Morgan Davies, Architect, High-street, Merthyr	do.
Furnishing Board Room at Workhouse	Halifax Guardians	W. Clement Williams, Architect, 20, Southgate, Halifax	Aug. 22
Goods Store of Timber, with Iron Roof, Moira Station	G.N.Ry. Co., Ireland	W. H. Mills, Engineer, Amiens-street Terminus, Dublin	do.
Masonry Gatehouse, Newfoundwell Level Crossing	do.	do.	do.
Board Room, Muniment Room, etc., at Workhouse	Colchester Guardians	G. H. Page, Architect, Trinity-chambers, Colchester	do.
Alterations, etc., Electric Light Offices, Pine-grove	Bootle Corporation	B. J. Wolfenden, Borough Engineer, Bootle	do.
2,900 yds. of 4-in. Cast-Iron Pipes	Chipping Campden R.D.C.	Willcox & Raikes, Engs., Union-chbrs., 63, Temple-row, Birmingh'm	do.
5,500 yds. of 3-in. Cast-Iron Pipes	do.	do.	do.
Cementing of Footpaths, Atkinson-terrace, etc.	Wallsend Corporation	G. Hollings, Borough Surveyor, Corporation Offices, Wallsend	do.
Street Works	Andover Corporation	Borough Surveyor's Office, Town Hall, Andover	do.
Gas Mains and Services, Stepping Hill New Infirmary	Stockport Guardians	W. H. Ward, Architect, Paradise-street, Birmingham	do.
208 Tons of Macadam	Andover Corporation	Borough Surveyor's Office, Town Hall, Andover	do.
Gas Meters	Glasgow Corporation	A. Wilson, 45, John-street, Glasgow	Aug. 23
Demolition, Old Brdge over Goyt, Bridge-st., Whaley	Yeardsley-cum-Whaley U.D.C.	C. R. Brady, Engineer, 13, Warren-street, Stockport	do.
Rebuilding Bridge over the Goyt, Whaley Bridge	do.	do.	do.
Steelwork for Bridge over the Goyt	do.	do.	do.
Valve (Contract No. 2), Derwent Aqueduct	Derwent Valley Water Board	E. Sandeman, Engineer's Office, Bamford, near Sheffield	do.
*Fireproof Floor to Switch-board Gallery	Ashton-under-Lyne Corporation	Borough Electrical Engineer, Ashton-under-Lyne	do.
Plastering Walls, Technical School, Tavistock-road	Plymouth Education Authority	E. Chandler Cook, 18, Princess-square, Plymouth	Aug. 24
Making-up Walton-road and Herbert-road	Clacton U.D.C.	A. R. Robinson, Surveyor, Town Hall-buildings, Clacton-on-Sea	do.
300 Tons of 3-in. Limestone Road Metalling	Briton Ferry U.D.C.	H. A. Clarke, Engineer, Council Offices, Briton Ferry	do.
250 Tons of 1½-in. Limestone Road Metalling	do.	do.	do.
Fifty Tons of Chippings	do.	do.	do.
*Erec. of New Veg. Kitchen, etc., Renfrew-rd. Wkhse.	Lambeth Guardians	Guardians' Offices, Brook-street, Kennington-road, S.E.	do.
*Isolation Cottage at Manston	Isle of Thanet Union	R. A. Harris, 3, Cecil-square, Margate	do.
Waterworks, Ampleforth	Helmsley R.D.C.	E. J. Silcock, Engineer, 10, Park-row, Leeds	Aug. 25
Rebuilding "Three Generals," Aberdare		T. Roderick, Architect, Clifton-street, Aberdare	do.
Making Good After Fire, No. 25, Cardiff-st., Aberdare		do.	do.
Clearing Site, etc., for Dwellings	Kingstown U.D.C.	M. A. Manning, Town Hall, Kingstown	do.
Eighty-nine Habitations, Cross-avenue, North	do.	do.	do.
*Drain & Sanita. Wks., Fulbourne Asyl., nr. Cambridge	Visitors, Camb., etc., Lunatic Asyl.	A. P. MacAllister, 20, St. Andrew's-street, Cambridge	Aug. 26
Laboratory and Classroom, Rugeley Grammar School	The Governors	W. E. Rogers, Architect, Rugeley	Aug. 27
Murston Drainage	Milton (Kent) R.D.C.	W. Leonard Grant, Sittingbourne	do.
Brick & Concrete-covered Service Tank (15,000 galls.)	Fairfield (Derbyshire) U.D.C.	Swann & Brady, Engineers, Town Hall, Chapel-on-le-Frith	Aug. 29
Collecting Wells, Turners Lodge	do.	do.	do.
1,900 lineal yds. of 3-in. Cast-Iron Pipes	do.	do.	do.
Alterations, etc., Distington Council School	Cumberland Education Committee	Clerk of Works, The Courts, Carlisle	do.
Two Villas, Purdysburn	Belfast Asylum Committee	A. Ferguson, Surveyor, Scottish Provident-buildings, Belfast	do.
Steel Coal Bunkers	Ilford U.D.C.	A. H. Shaw, M.I.E.E., Electricity Works, Ilford	do.
Weighbridge	do.	do.	do.
*Erection of Library, Prince Regent's-la., Custom House	County Borough of West Ham	Borough Engineer, Town Hall, Stratford, E.	do.
Street Works	Stanley U.D.C.	J. Routledge, Surveyor Council Offices, Stanley	Aug. 30
Low Tension Mains, Conduits, etc.	Hove Corporation	Handcock & Dykes, Engineers, 1, Victoria-st., Westminster, S.W.	do.
Painting Police Buildings	Bacup Corporation	Borough Surveyor, Bacup, Lancs.	do.
Painting Fire Station	do.	do.	do.
Painting St. James-street Property	do.	do.	do.

CONTRACTS.—*Continued.*

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, etc., supplied by	Tenders to be delivered
Forty-one Workmen's Dwellings, High Wincobank	Sheffield Health Committee	C. F. Wike, City Surveyor, Town Hall, Sheffield	Aug. 31
Making-up Ten Streets	Middleton Corporation	W. Welburn, Town Hall, Middleton	do.
650 Tons of Dug Flints	Littlehampton U.D.C.	H. Howard, F.S.I., Town Offices, Littlehampton	do.
100 Tons of Cherbourg Quartzite	do.	do.	do.
100 Tons of Guernsey Granite	do.	do.	do.
Steam Rolling and Scarifying	do.	do.	do.
*Additions, Cornwallis-rd. Wkhse., Upper Holloway, N.	Islington Guardians	W. Smith, Architect, 65, Chancery-lane, W.C.	Sept. 1
School for 700, Newgate-lane, Mansfield	Education Committee	Vallana & Westwick, Architects, Mansfield	Sept. 2
Steam Horse-drawn Fire Engine	Beckenham U.D.C.	J. A. Angell, Surveyor, Beckenham	Sept. 5
Two-horse Fire Escape, Hose Tender, etc.	do.	do.	do.
One-horse Fire Escape, Hose Tender, etc.	do.	do.	do.
*Alterations to Rotherhithe Town Hall	Metropolitan Boro' of Bermondsey	Town Hall, Spa-road, S.E.	do.
*Enlarging Richmond Head Post-Office	H.M. Office of Works	H.M. Office of Works, Storey's Gate, S.W.	Sept. 6
Writtle Drainage Works	Chelmsford R.D.C.	J. Taylor, Sons, & Santo Crimp, 27, Gt. George-st., Westminster	Sept. 8
Scarifier	Edmonton U.D.C.	Engineer, Town Hall, Lower Edmonton	Sept. 11
Three Electric Car Traversers	I.C.C.	County Hall, Spring Gardens, S.W.	Oct. 4
Enlargement of Wesleyan Schools, Hunslet	.....	Danby & Simpson, Architects, 73, Albion-street, Leeds	No date.
Scribbling Shed, Cliffe Mills, Pudsey	.....	S. E. Smith, F.R.I.B.A., 12, South-parade, Leeds	do.
Villa-residence, Comber, County Down	.....	W. J. Moore, Architect, 35, Royal-avenue, Belfast	do.
Theatre	Stockport Empire Theatre Co.	Maxwell & Tuke, Architects, 25, Brazennose-street, Manchester	do.
Drainage, etc., Northumberland County Asy., Morpeth	.....	J. A. Bean, County Surveyor, Moothall, Newcastle-on-Tyne	do.
Driving a Hard Heading, Mynachdy Colliery	.....	Mynachdy Colliery, Ynysybwl	do.
Two Semi-Detached Villas, Pontypridd	.....	J. Gabriel, Trallwn Bridge, Pontypridd	do.
Shop and Premises, Stables, etc., Port Talbot	Rees Evans	F. B. Smith, C.E., Architect, Port Talbot	do.
Reading-room and Library, Rogerstone	Parish Council	Swash & Bain, F.R.I.B.A., Midland Bank-chambers, Newport	do.
Piggeries, Roxburgh, etc., Asylum, Melrose	Asylums Board	Sydney, Mitchell, & Wilson, Architects, Young-street, Edinburgh	do.
*Wesleyan School Church at Hindhead	.....	Gordon & Gunton, Finsbury House, Blomfield-street, E.C.	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in
*Assistant Engineer	Singapore Municipal Commissioners	360*l.* per annum	Aug. 16
*Clerk of Works	Teddington U.D.C.	3*l.* 3s. per week	Aug. 20
*Architectural Assistant	Barrow-in-Furness Corporation	120*l.*	Aug. 22
*Quantity Surveyor	Surrey Education Committee	See advertisement in this issue	do.
*Clerk of Works	Chiswick U.D.C.	3*l.* 10s. per week	do.

Those marked with an asterisk (*) are advertised in this Number. *Competitions*, iv. *Contracts*, iv. vi. viii. x. *Public Appointments*, xvi. xvii.

TENDERS.—*Continued from page* 191.

BANSTEAD.—For a pair of villas at Banstead, Surrey, for Mr. A. Ware, and under the supervision of Mr. Arthur L. Dartnell, architect and surveyor, 62, High-street, Croydon :—

Fuller	£1,600	Burnand	£1,350
Carpenter	1,077	Truett & Steel*	1,330
Bacon	1,353		

BOLTON-UPON-DEARNE.—For private street works in Williams-street, Highgate, for the Urban District Council. Mr. J. W. Wilson, architect, King-street, Dewsland, Barnsley :—

J. Exley	£688 17	S. Hamilton	£340 0
J. Ward	455 0	J. Moran, 31, Fitzwilliam-street, Sheffield*	315 0
W. Baines	369 10		
S. W. Meanley	343 0		

BOURNE (Lincs.).—For the timber construction of three bridges and part viaduct, the approach to the new Tongue End Bridge, for the Urban District Council. Mr. F. G. Shilcock, surveyor, Bourne :—

Pegg & Speight	£465 0	Harman & Langton	£375 0
Irving, Spalding*	398 10	W. Smith	372 15
		Dewsbury & Son	359 5

CARLISLE.—For drainage works at Fusehill Workhouse, for the Guardians. Mr. George Armstrong, architect and surveyor, 24, Bank-street, Carlisle :—

J. & R. Bell	£291 9 10	W. Baty, West Walls, Carlisle*	£243 13 6
Baty	279 11 8		
Hill & Son	261 0 0		

CARNARVON.—For construction of bath and buildings on the Aber foreshore, for the Corporation. Mr. E. Hall, Borough Surveyor :—

	Bath.	Buildings.	Total.
	£ s. d.	£ s. d.	£ s. d.
Yorkshire Hennebique Contracting Co., Ltd.	3,242 0 0	—	—
Preston Granite Concrete Co.	2,507 13 0	—	—
Williams & Roberts	—	778 8 11	—
Morris	—	749 0 0	—
Jones			
Roberts & Bro., Ruabon Works, Llandudno*	2,446 0 2	630 5 0	3,076 5 2
Borough Engineer's estimate†	2,139 0 0	551 0 0	2,690 0 0
	—	—	2,500 0 0

* Not including sundry items suggested after inquiry by the Local Government Board, and provided for in Contractor's Tender.

CATERHAM.—For a pair of villas at Caterham, Surrey, for Mr. William Sandiford, and under the supervision of Mr. Arthur L. Dartnell, architect and surveyor, 62, High-street, Croydon :—

[illegible]	£1,497 0 0	Gowman	£1,300 0 0
Thompson	1,469 0 0	Truett & Steel*	1,288 0 0
[illegible]	1,364 0 0	Roberts	1,029 9 0
[illegible]	1,359 0 0		

DERBY.—For alterations and additions to children's receiving home, Nos. 2 and 4, Mount-street, for the Guardians. Mr. F. C. Coulthurst, architect, 4, Albert-street, Derby :—

J. Young, Wallbrook-road, Derby* £240

DERI (Wales).—For erecting thirty-five houses at Deri, near Bargoed, for the Deri No. 1 Building Club. Messrs. J. Llewellin Smith & Davies, architects, Aberdare :—

	Per house.
J. James, Emlyn Cottage, Gilfach, Bargoed*	£220 0
T. Williams	215 0
L. Thomas	214 15

DUDLEY.—For alterations to workhouse infirmary. Mr. Arthur Marshall, architect, King-street, Nottingham :—

T. J. Mason	£4,334 7 8	H. Gough & Son	£3,590 0 0
C. A. Horton	3,890 0 0	Gowing & Ingram	3,565 0 0
T. Barlow & Co.	3,780 0 0	G. E. Jackson	3,477 0 0
H. Dorse	3,750 0 0	Oakley & Coulson	3,349 0 0
M. Round	3,700 0 0		
C. Griffiths	3,600 0 0		

DUNFERMLINE.—For a storage reservoir on Glenquey Burn, formation of roads, and laying a main conduit, for the District Committee of the County Council of Fife. Mr. W. R. Copland, C.E., Glasgow :—

J. Young, Ltd., 138, Bath-street, Glasgow* £34,094 3 3

DUNFERMLINE.—For 3 miles of main conduit between Saline and Redcraigs, and 8¼ miles of pipes from Redcraigs to Inverkeithing, etc., for the District Committee of the Fife County Council. Mr. W. R. Copland, C.E., Glasgow :—

Blair & White, 95, Bath-street, Glasgow* £23,049 15 2

DUNFERMLINE.—For a main conduit between Glendevon and Milesmark, for the District Committee of the Fife County Council. Mr. W. R. Copland, C.E., Glasgow :—

Casey & Darragh, Stirling* £22,091 18 8

EXETER.—For sub-structure of car depot, Heavitree-road, for the Corporation. Mr. T. Moulding, City Engineer and Surveyor, 7, Southernhay West, Exeter :—

W. E. Blake, Sutton Building Yard, Plymouth* £1,130

GORTON.—For erecting a temporary school for 600 children, Hyde-road, for the Education Committee. Mr. J. W. Wiles, Surveyor, Town Hall, Gorton :—

Young, Tinker, & Young, Manchester* £1,767

HARROGATE.—For main drainage works in the parishes of Bilton and Killinghall, for the Corporation. Mr. E. W. Dixon, Engineer, 5, Prospect-crescent, Harrogate :—

Contract No. 5.

Holme & King, Ltd., Liverpool .. £14,566 11 11

HARROGATE.—For 250,000 semi-plastic double-pressed radiated engineering bricks for Carlesmoor Tunnel, Masham, for the Corporation. Mr. E. W. Wilson, Engineer, 14, Albert-street, Harrogate :—

Huncoat Plastic Brick and Terra Cotta Co., Ltd., Huncoat, Accrington* .... £3 2 4½ ?

HERTFORD.—For broken granite :—

	Per ton. s. d.		Per ton. s. d.
Croft Granite Co.	11 0	A. & F. Manuelle	11 0
Enderby & Stoney Stanton	11 9	V. Parker (Tar Mac)	14 9
Griff	10 9	Cliff Hill	11 9
Paramors (Quenast)	15 0	Kaltenbach & Schmitz (Quenast)	12 10
London Basalt Co.	12 4	Kaltenbach & Schmitz (Rhine Basalt)	12 7
Midland Granite Co.	11 1	Groby Granite Co.	11 10
Watson & Co.	14 0	Mountsorrell (Stoney Stanton)*	11 3
Sommerfeld (Quartzite)	13 3	Brunton & Son (Forest Rock)	11 9
Whitwick Granite Co.	12 0	Forest Rock Co.	11 9
Hall (Guernsey)	14 6	Clee Hill Dhu Stone	15 10
Lyon & Co. (Quenast)	14 0	Burgess & Co.	11 9
Lyon & Co. (Quartzite)	13 10		
Van Praagh	11 2		

HULL.—For the erection of the Law Courts portion of Town Hall, for the Kingston-upon-Hull Corporation. Messrs. S. B. Russell & T. E. Cooper, architects, 11, Gray's Inn-square, London, W.C. Quantities by Mr. J. Watson, Cogan-chambers, Bowlalley-lane, Hull :—

Quibell, Son, & Greenwood, Ltd., Fountain-road, Hull* £31,212 15

IVYBRIDGE.—For widening Blackford-road and constructing a footpath, for the Urban District Council. Mr. W. R. Parker, Surveyor to Council, Ivybridge :—

Lapthorn	£238 1 6	Jefford & Sons, Devonport*	£205 0 0
G. B. Andrews	232 0 0		

LEEDS.—For painting, etc., the dead meat market, for the Corporation :—

L. Cook, Shepherd's-lane, Leeds .. £338 8 6

LEFTWICH.—For building an infectious diseases hospital at Leftwich, near Northwich, for the Northwich Rural and Northwich, Middlewich, and Winsford Urban Hospital Committee. Mr. J. Cawley, architect, Central-chambers, Northwich :—

Birchall Bros., Middlewich* £6,540 13 6

LIVERPOOL.—For erecting a new sorting office at Old Swan, Liverpool, for the Commissioners of H.M. Works and Public Buildings :—

Bullen Bros. & Son	£1,376 0 0	Lewthwaite & Kewley	£1,096 12 6
A. White & Sons	1,225 5 4	Hughes & Stirling	1,054 0 0
J. & T. Rimmer	1,141 0 0	H. Kelly & Bros.	1,044 19 0
S. Fowler	1,123 0 0	J. Henshaw & Sons	1,017 0 0
J. Paterson & Son	1,118 0 0	G. L. Descer*	1,009 0 0

LONDON.—For alterations to ice wells, etc., at New Wharf-road, King's Cross, N., for Messrs. Carlo Gatti, Stevenson, & Slater, Ltd. Mr. H. Phelps Drew, architect, 33, King-street, Covent Garden, W.C. Quantities by Mr. I. Rookwood, 25, Bedford-row, W.C.:—

Ashby & Horner ..	£1,880	Norton	£1,487
Wilkinson	1,560	Edwards & Medway*	1,470

LONDON.—For alterations to 39, Pavilion-road, Chelsea, S.W., for Mr. Albert Cooper. Mr. H. Phelps Drew, architect, 33, King-street, Covent Garden, W.C.:—

Crabtree	£456	Bolton*	£388
Parkinson	401		

LONDON.—For conversion of infants' block at Norwood Schools into a receiving ward, for the Lambeth Guardians. Mr. S. R. J. Smith, architect, 15, York-buildings, Adelphi, W.C.:—

		Time for completion. Weeks.
Stimpson & Co	£937 0 0	.. 10
J. Parsons	887 0 0	.. 8
Martin, Wells, & Co.	886 0 0	.. 14
G. Jennings, Ltd.	850 0 0	.. 10
R. E. Nightingale	828 0 0	.. ‡
W. Mark & Co., Ltd.	826 4 2	.. 6
C. R. Price	809 14 6	.. 9
H. Kent, 17, Albion-road, Lewisham*	775 10 0	.. 12
J. Shelbourne & Co.	780 0 0	.. 13

‡ Any reasonable time.

LONDON.—For internal painting and decorating of Council Chamber, Committee Rooms, etc., at Hackney Town Hall, Mare-street, N.E., for the Hackney Borough Council. Mr. Norman Scorgie, M.Inst.C.E., Borough Engineer and Surveyor:—

Dawson, Swainston, & Co.	£527	4	7
C. Castle & Son	476	0	11
A. Heard & Co.	426	8	4
H. Runham Brown....	404	2	2
Wontner & Co., Ltd..	401	17	7
G. Wales & Co., Ltd..	383	16	2
M. McCarthy	364	15	0
Langdon & Clark	351	4	1
J. M. Bookbinder....	343	15	0
C. J. Kemp	336	0	0
Chudleigh Bros.	328	5	0
H. Dearsley & Son	320	10	1
W. Whiteley, Ltd.....	310	6	5
S. Gorer & Son	298	5	3
F. Troy & Co.	£296	12	0
P. McCarthy	276	0	0
J. Johnson..	252	13	11
H. Gent	250	19	8
F. W. Hardev	247	13	6½
W. Wallace & Co., Ltd. ..	245	14	0
J. Kirkaldy & Son	240	3	6
R. Woollasten & Co.	239	0	0
Spencer, Santo, & Co., Ltd.....	235	6	4
R. E. Nightingale	235	5	11
Campbell & Christmas .	235	0	0
F. de Jong & Co.	232	8	4
Campbell, Smith, & Co.*	231	6	1
Gavin Bros.	184	4	0
R. Athey ..	167	16	1

LONDON.—For erecting premises, Stratford, for Messrs. Williams & Thomas. Messrs. G. Baines & Son, architects, Clement's-inn, Strand, W.C.:—

Shurmur & Sons, Ltd.	£7,983	Patman & Fotheringham	£6,177
T. H. Kingerlee & Sons	7,177	W. Wallis	5,999
F. Gough & Co. ..	6,494	G. J. Hosking	5,977
Coulson & Lofts ..	6,307	F. & H. F. Higgs..	5,947
H. L. Holloway ..	6,190	Battley, Sons, & Holness	5,797
J. Grover & Son ..	6,182	C. North, Grove Works, Manbey-rd., Stratford, E.‡	5,620
Kerridge & Shaw..	6,177		

‡ Accepted with modifications.

LONDON. — For erecting houses, Lakeside-road, Palmer's Green. Messrs. Warran & Stupart, architects, 78, Grand-parade, Harringay, N.:—

W. Lawrence & Son	£1,750	0	
P. Hart	1,696	7	
B. Milward	1,535	10	
J. C. Haward ..	1,533	0	
C. Hale & Co...	1,525	0	
J. Thomas	£1,500	0	
G. D. Barns ...	1,450	0	
W. Simmonds..	1,400	0	
J. Middleton, Tottenham*	1,400	0	

PORTSMOUTH.—For alterations and additions to The Empire Palace of Varieties, Portsmouth, section 2. Mr. W. H. Fry, architect, Gosport. Quantities by the architect:—

F. Cake, Southsea* £3,000

SOUTHAMPTON.—For rebuilding Nos. 43 and 45, Above Bar, Southampton, for the Hampshire Advertiser Printing and Publishing Co., Ltd. Mr. William Burrough Hill, F.S.I., architect, Southampton:—

J. Nichols	£16,287	Jenkins & Sons ..	£14,730
J. Harris	15,485	H. Stevens & Co.	14,543
Golding & Ansell	15,432	A. Wright & Son	14,367
Playfair & Toole..	15,197	Dyer & Sons	14,190
H. Cawte.....	14,841	F. Osman	13,937

TIPTON.—For repairs to buildings, playground, etc., at Bloomfield Council School, for the Urban District Council. Mr. A. Long, architect, 21, New-street, West Bromwich:—

J. Hunt	£450	0	0
W. A. Kendrick	380	11	6
S. W. Moore ..	330	0	0
T. Hardy	325	0	0
H. Dorse.....	£290	3	0
G. Jones	276	0	0
J. Brain, Princes End*	272	0	0

WIMBLEDON.—For making-up roads, for the Urban District Council. Mr. C. H. Cooper, Engineer and Surveyor, Council Offices, Broadway, Wimbledon:—

Birkbeck-road: Fry Bros., Lion Wharf, Greenwich	£816
Kingsley-road: Fry Bros., Lion Wharf, Greenwich	423
Dudley-road: E. Iles, Jun., Wimbledon	708
Parkside-avenue: T. Adams, Wood Green, N.	382

[Pendower-road will be carried out by Council.]

WOBURN, BEDS.—For alterations to manager's house at the Woburn Gas Works, for the Directors of the Gas Co. Mr. W. B. Stonebridge, architect, Woburn, R.S.O.:—

H. Gregory	£195	15	
Mibs Bros.	189	0	
A. W. Harris....	£189	0	
C. Sinfield*	143	12	

[Architect's estimate, £168.]

WORSLEY.—For repaving Manchester-road, for the Urban District Council. Mr. J. A. Corson, Surveyor to the Urban District Council:—

	Per yard. s.	d.
Snape & Sons, Eccles*	1	8½

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